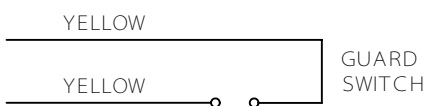
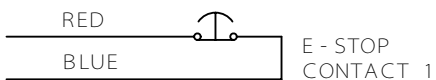
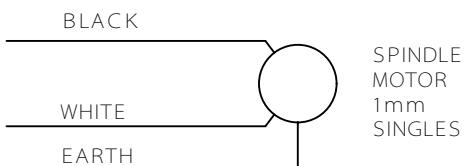
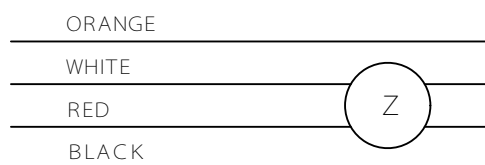
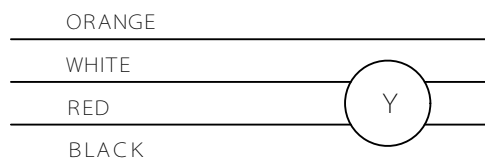
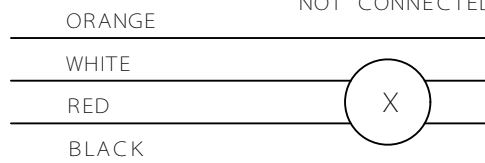
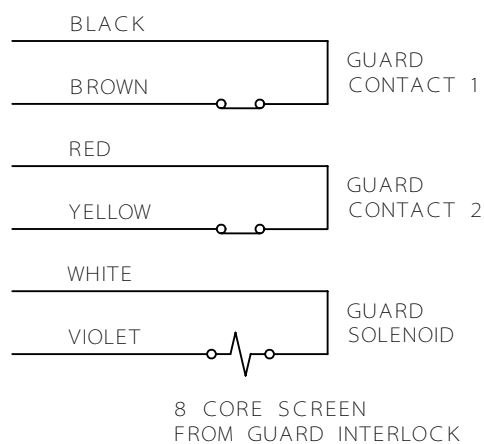
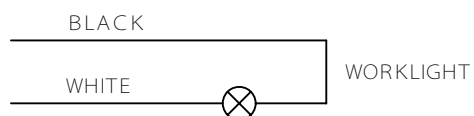
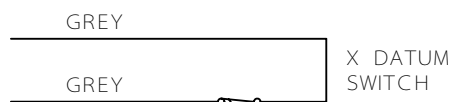
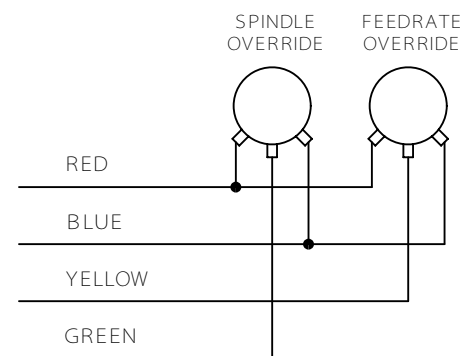


STEPPER MOTORS
YELLOW AND BLUE WIRES
NOT CONNECTED

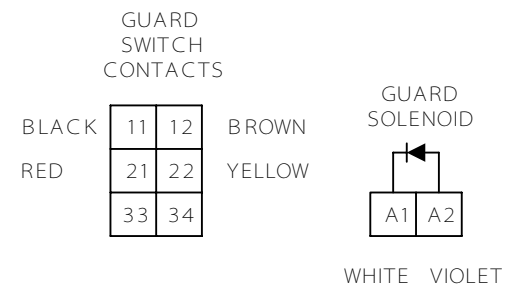


IF GUARD INTERLOCK FITTED
CONNECT AS SHOWN BELOW



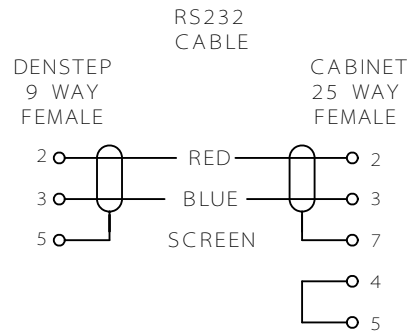
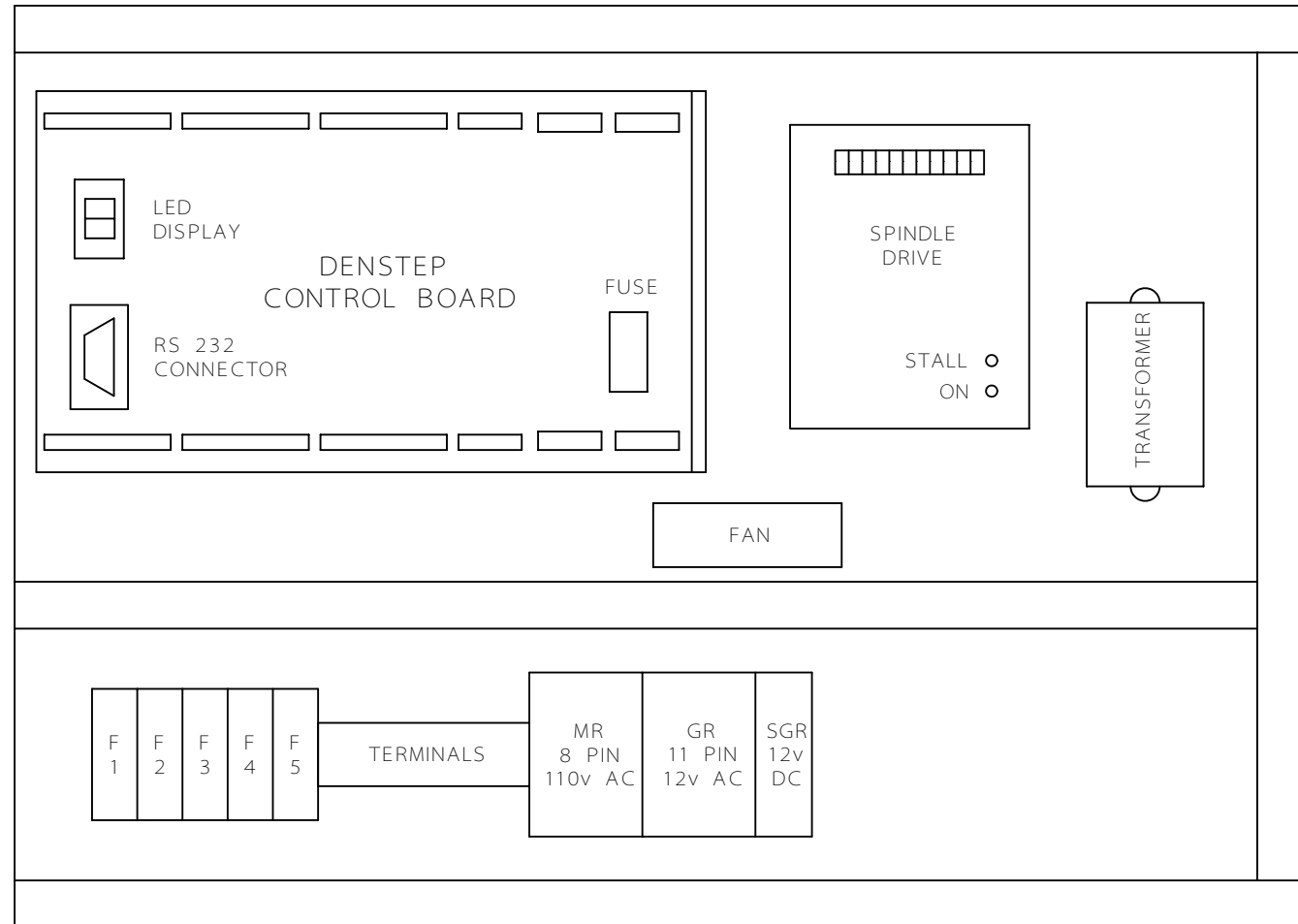
INTERLOCK GUARD SWITCH
WITH SOLENOID

(REMOVE LINK 12 - 41)



MICRO ROUTER
MOTOR AND
SWITCH
WIRING

SHEET 8
MICRO
ROUTER



600mm
2 CORE SCREEN CABLE

NEW RS 232 CABLE
REQUIRED FOR ALL
MICROMILLS AND MICROTURNS

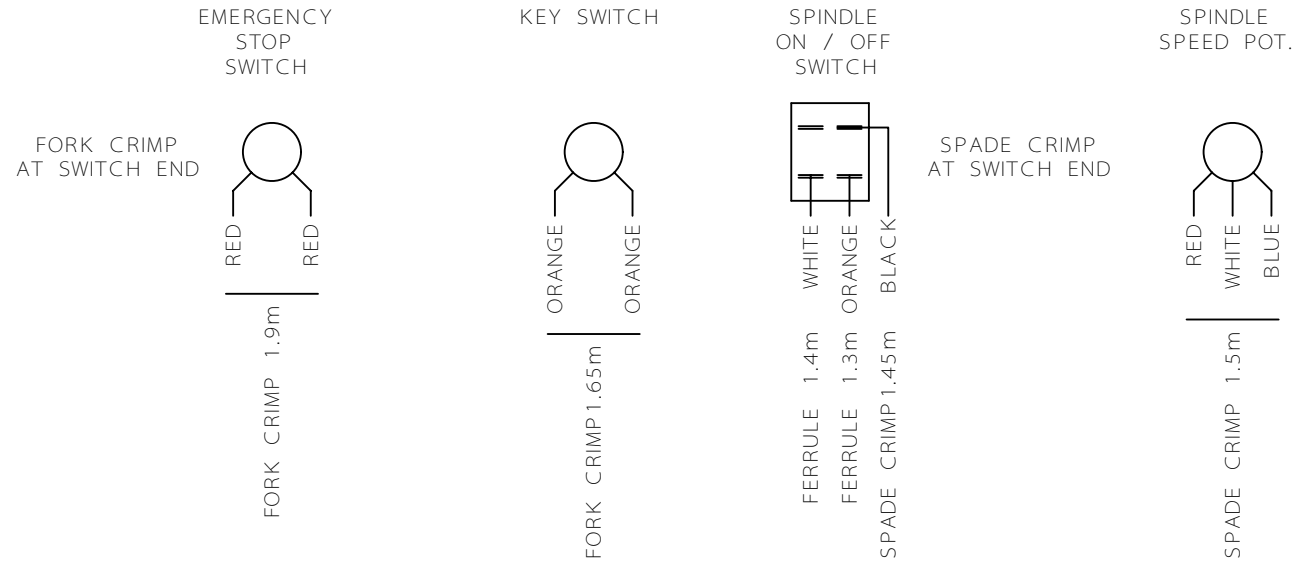
RELAY NAMES
MR MAIN RELAY
GR GUARD RELAY
SGR SPINDLE GO RELAY

MICROMILL 2000
PANEL LAYOUT
AND RS232 CABLE

SHEET 4
MICROMILL
DENSTEP

| | | | | | | |
|--|--|--|------------------|---|---------|-----------|
| | | | | MICROMILL POWER SCHEMATIC 110v SUPPLY | | SHEET 1 |
| | | | | | | MICROMILL |
| | | | | | | DENSTEP |
| DENFORD LIMITED BRIGHOUSE WEST YORKSHIRE | | | DRN BY A McHENRY | DATE 1 - 6 - 2000 | MMD - 1 | |

VIEW FROM BACK OF SWITCHES



SPINDLE MOTOR

| | | |
|--------|--------|-------------|
| RED | DO NOT | SPADE CRIMP |
| BLACK | EXTEND | |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650m | FERRULE |

AXIS MOTORS

| | | |
|--------|---------------|---------|
| RED | RED | |
| BLACK | BLACK | |
| ORANGE | ORANGE | |
| WHITE | YELLOW | |
| BLUE | NOT CONNECTED | |
| YELLOW | | |
| X AXIS | 1.1m | FERRULE |
| Y AXIS | 1.75m | |
| Z AXIS | 1.15m | |

DATUM SWITCHES

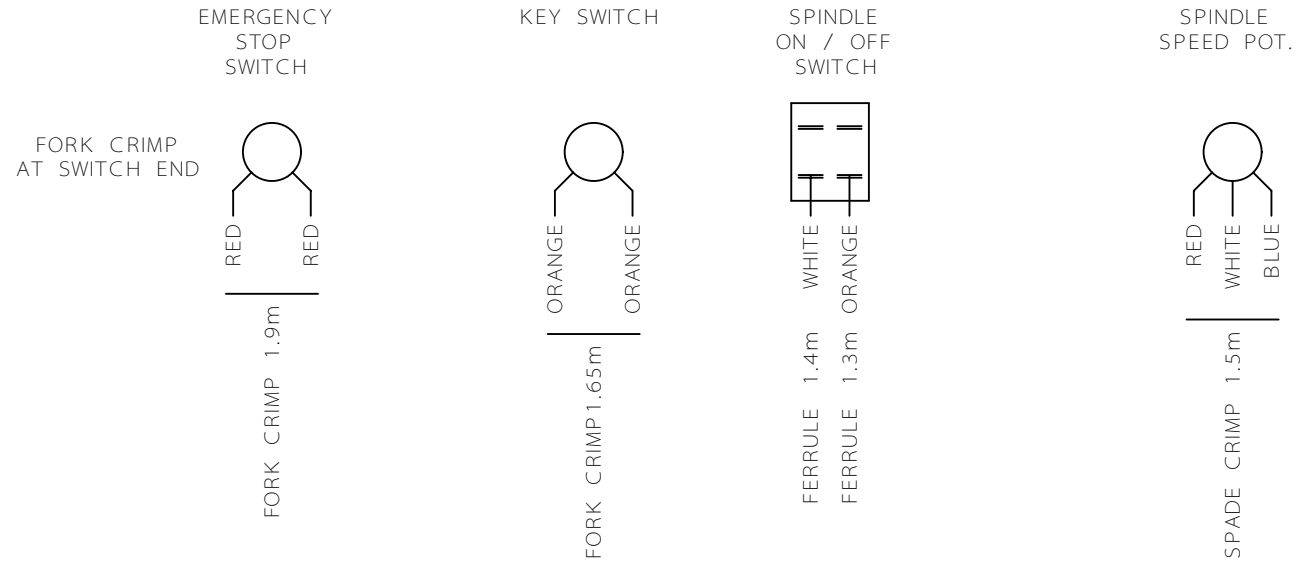
90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

MICROMILL
DEN - STEP CONTROL
BOARD WIRING

| |
|-----------|
| SHEET - |
| MICROMILL |
| DENSTEP |

VIEW FROM BACK OF SWITCHES



SPINDLE MOTOR

| | | |
|--------|--------|-------------|
| RED | DO NOT | SPADE CRIMP |
| BLACK | EXTEND | |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650m | FERRULE |

AXIS MOTORS

| | | | |
|----------|--|--------|--|
| RED | | RED | |
| BROWN * | | | |
| WHITE | | | |
| BLUE | | | |
| BLACK | | ORANGE | |
| ORANGE * | | | |
| GREEN | | | |
| YELLOW | | | |

X AXIS 1.1m
Y AXIS 1.75m
Z AXIS 1.15m

FERRULE

DATUM SWITCHES

90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

* ENSURE THAT CORRECT COLOURS ARE USED

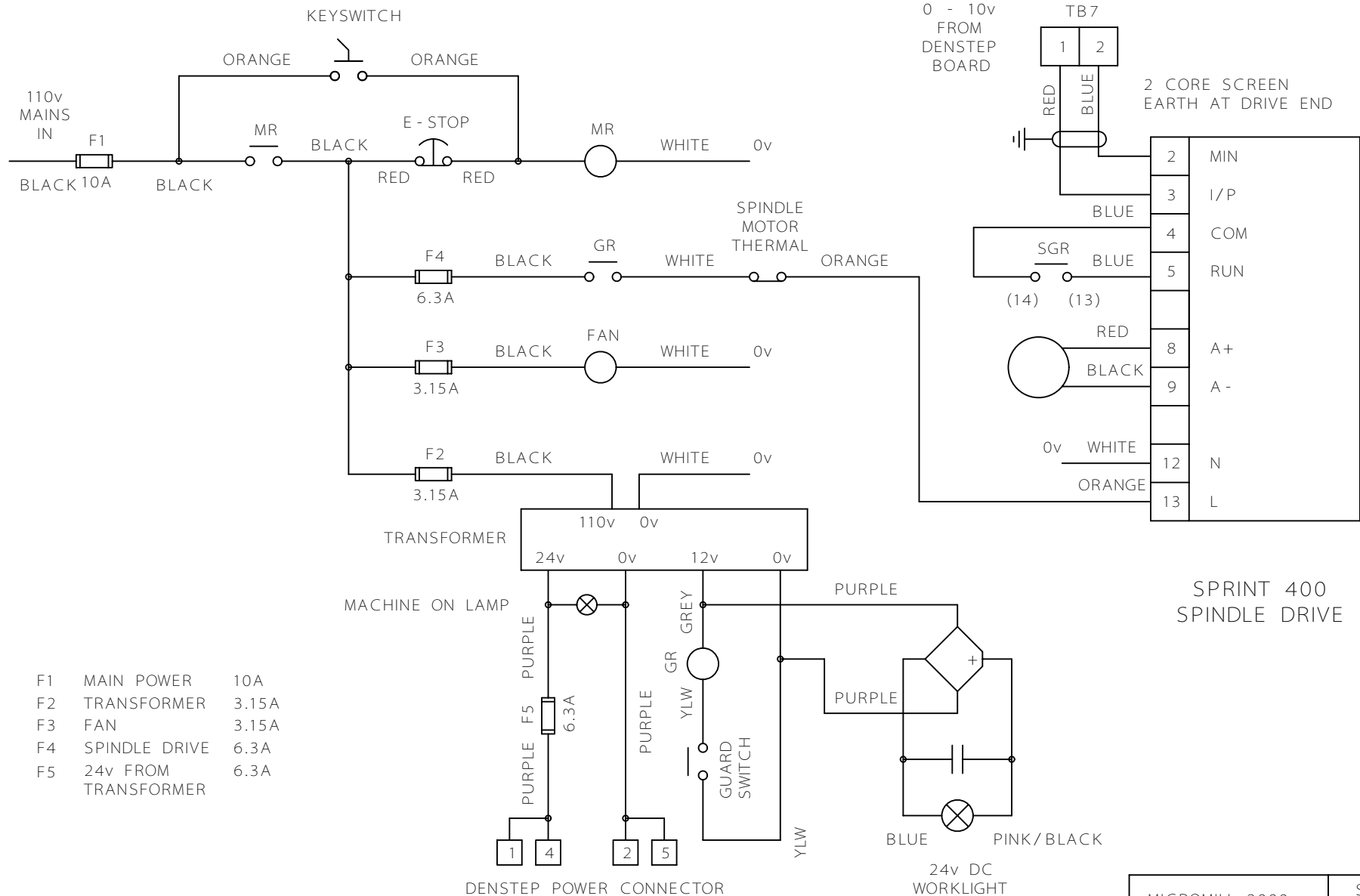
MICROMILL
DEN - STEP CONTROL
BOARD WIRING

| |
|-----------|
| SHEET - |
| MICROMILL |
| DENSTEP |



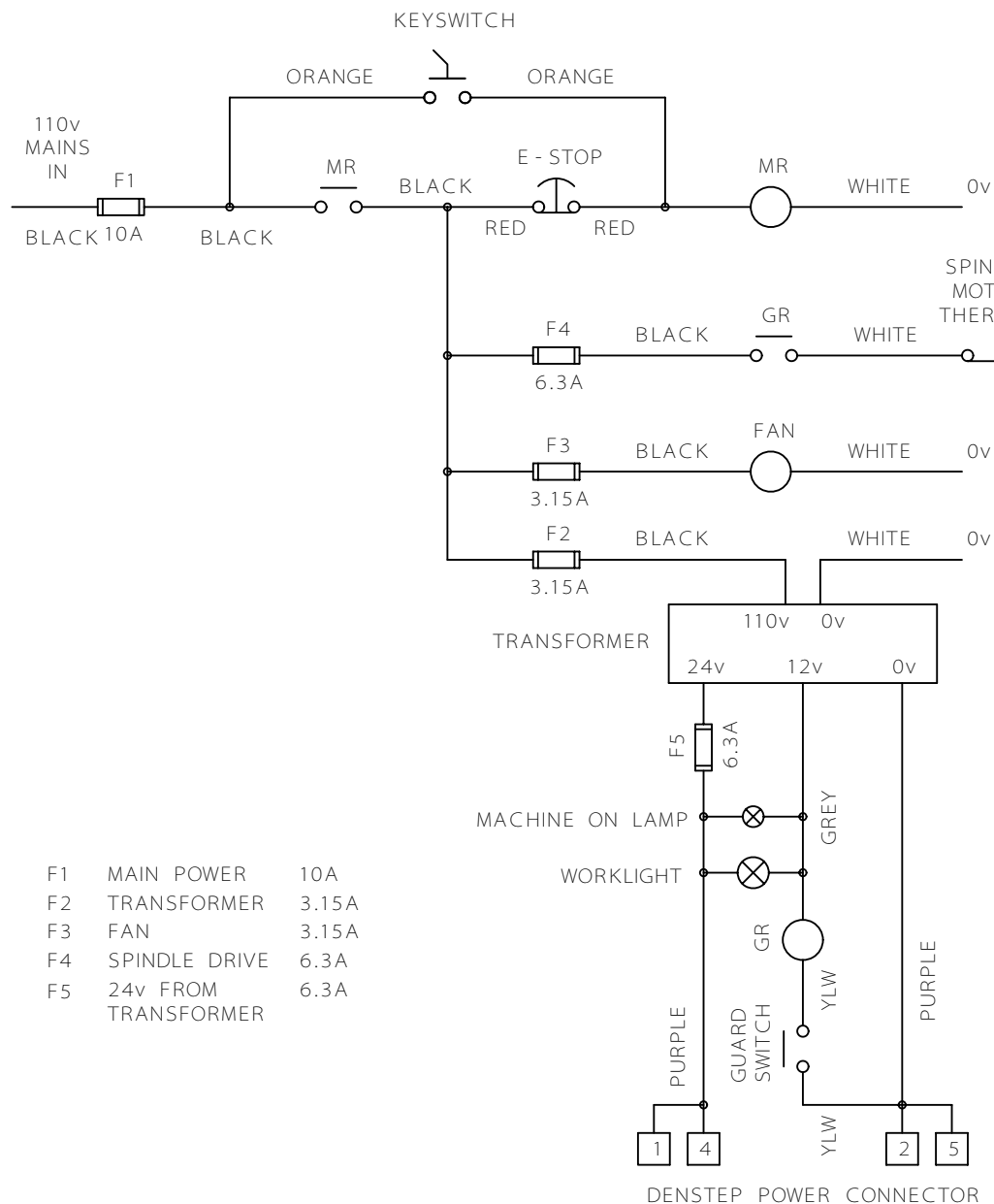
MICROMILL 2000
POWER SCHEMATIC
110v SUPPLY

SHEET 1
MICROMILL
DENSTEP



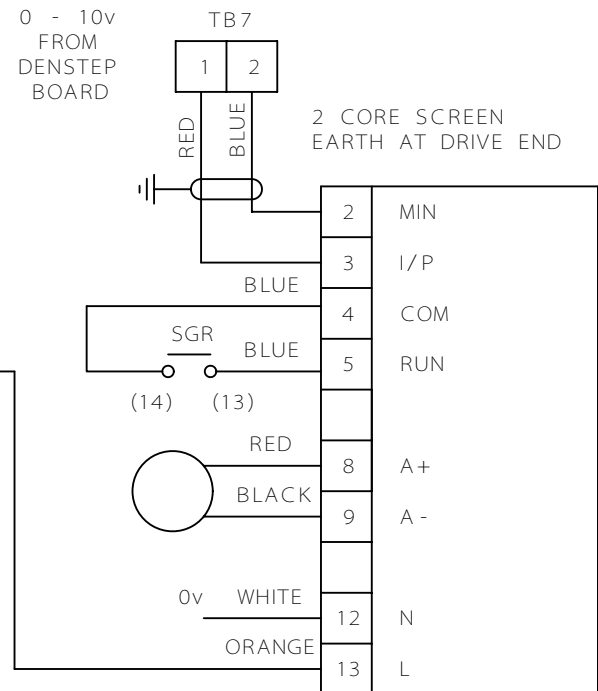
MICROMILL 2000
POWER SCHEMATIC
110v SUPPLY

SHEET 1
MICROMILL
DENSTEP



- | | | |
|----|----------------------|-------|
| F1 | MAIN POWER | 10A |
| F2 | TRANSFORMER | 3.15A |
| F3 | FAN | 3.15A |
| F4 | SPINDLE DRIVE | 6.3A |
| F5 | 24v FROM TRANSFORMER | 6.3A |

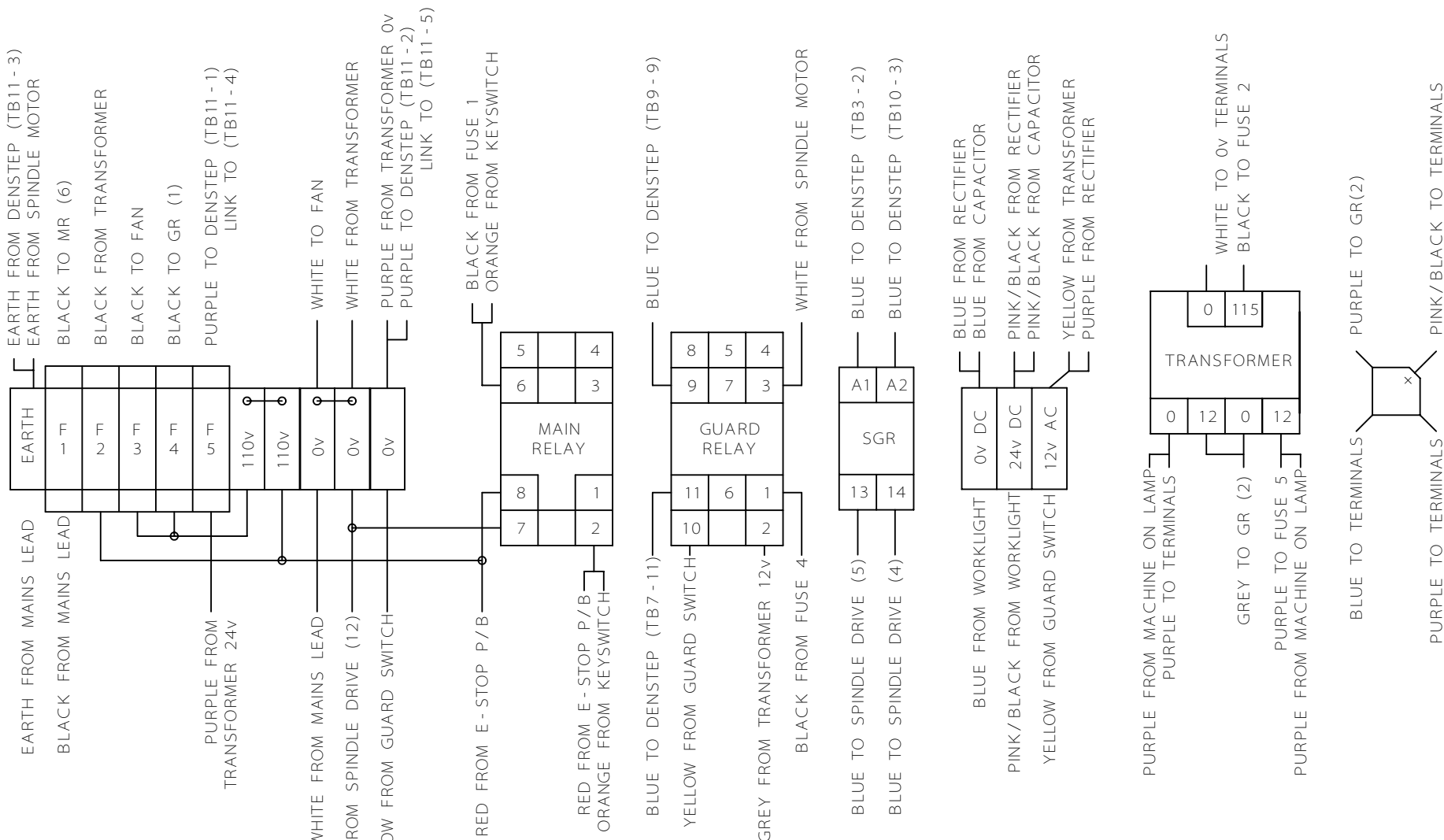
0 - 10v
FROM
DENSTEP
BOARD



SPRINT 400
SPINDLE DRIVE

MICROMILL 2000
POWER SCHEMATIC
110v SUPPLY

| |
|-----------|
| SHEET 1 |
| MICROMILL |
| DENSTEP |



- F1 MAIN POWER 10A
 F2 TRANSFORMER 3.15A
 F3 FAN 3.15A
 F4 SPINDLE DRIVE 6.3A
 F5 24v FROM TRANSFORMER 6.3A

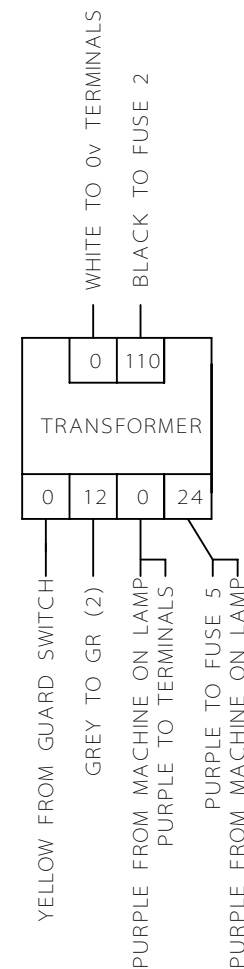
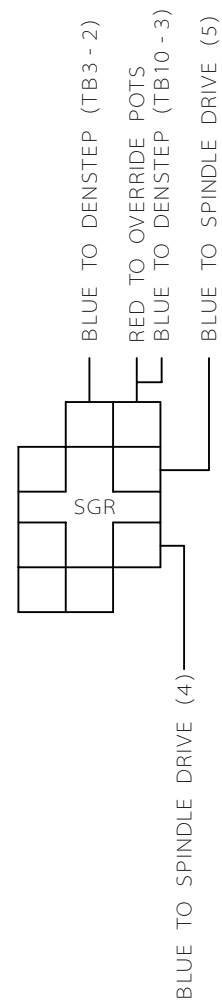
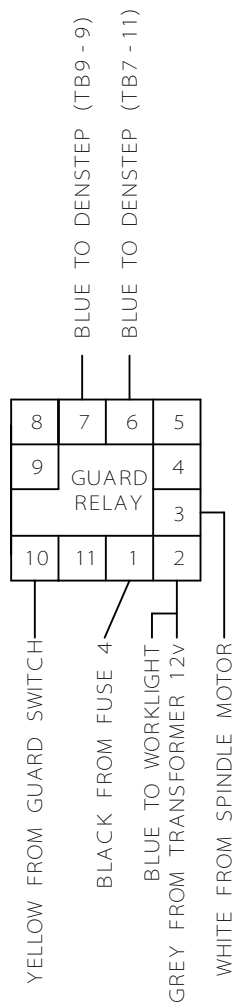
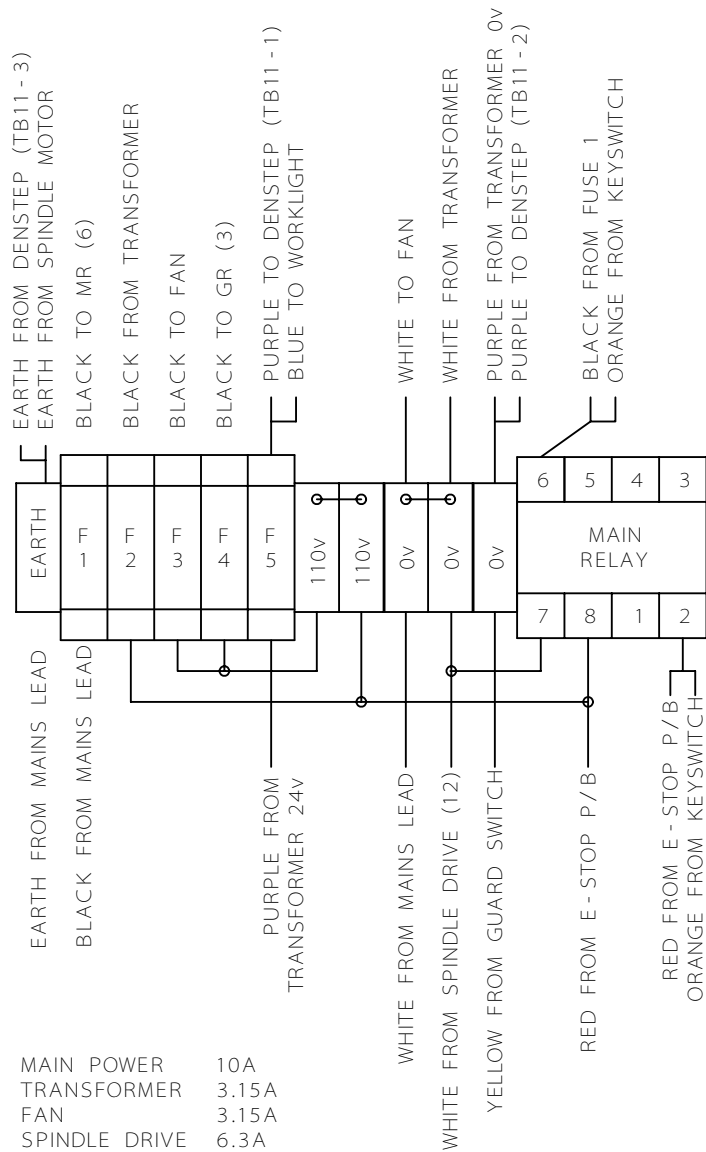
RELAY NAMES
 MR MAIN RELAY
 GR GUARD RELAY
 SGR SPINDLE GO RELAY

COIL - 110v AC
 COIL - 12v AC
 COIL - 12v DC

MICROMILL 2000
 RELAY AND FUSE
 WIRING

SHEET 2
 MICROMILL
 DENSTEP

F1 MAIN POWER 10A
 F2 TRANSFORMER 3.15A
 F3 FAN 3.15A
 F4 SPINDLE DRIVE 6.3A
 F5 24v FROM TRANSFORMER 6.3A

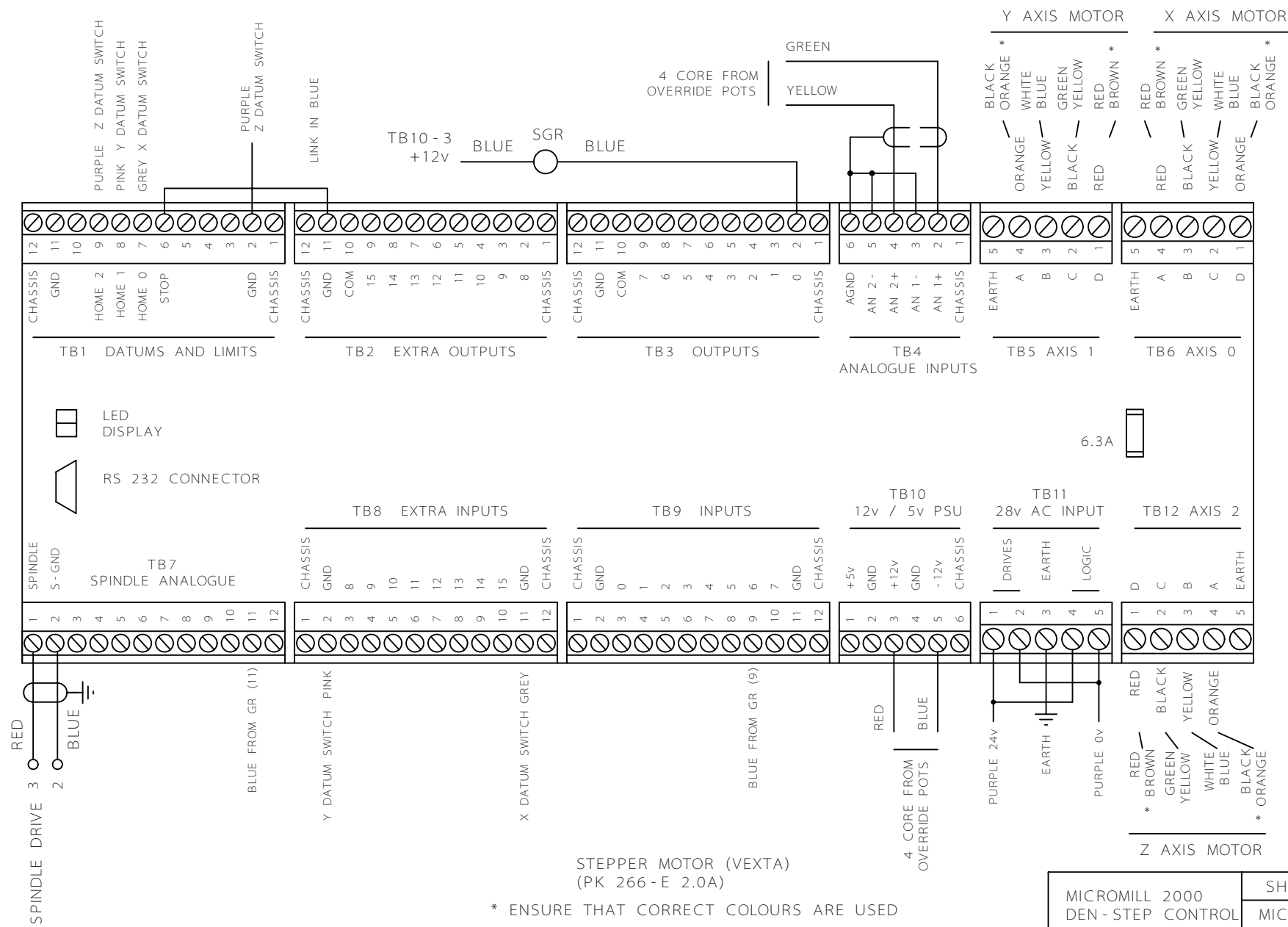


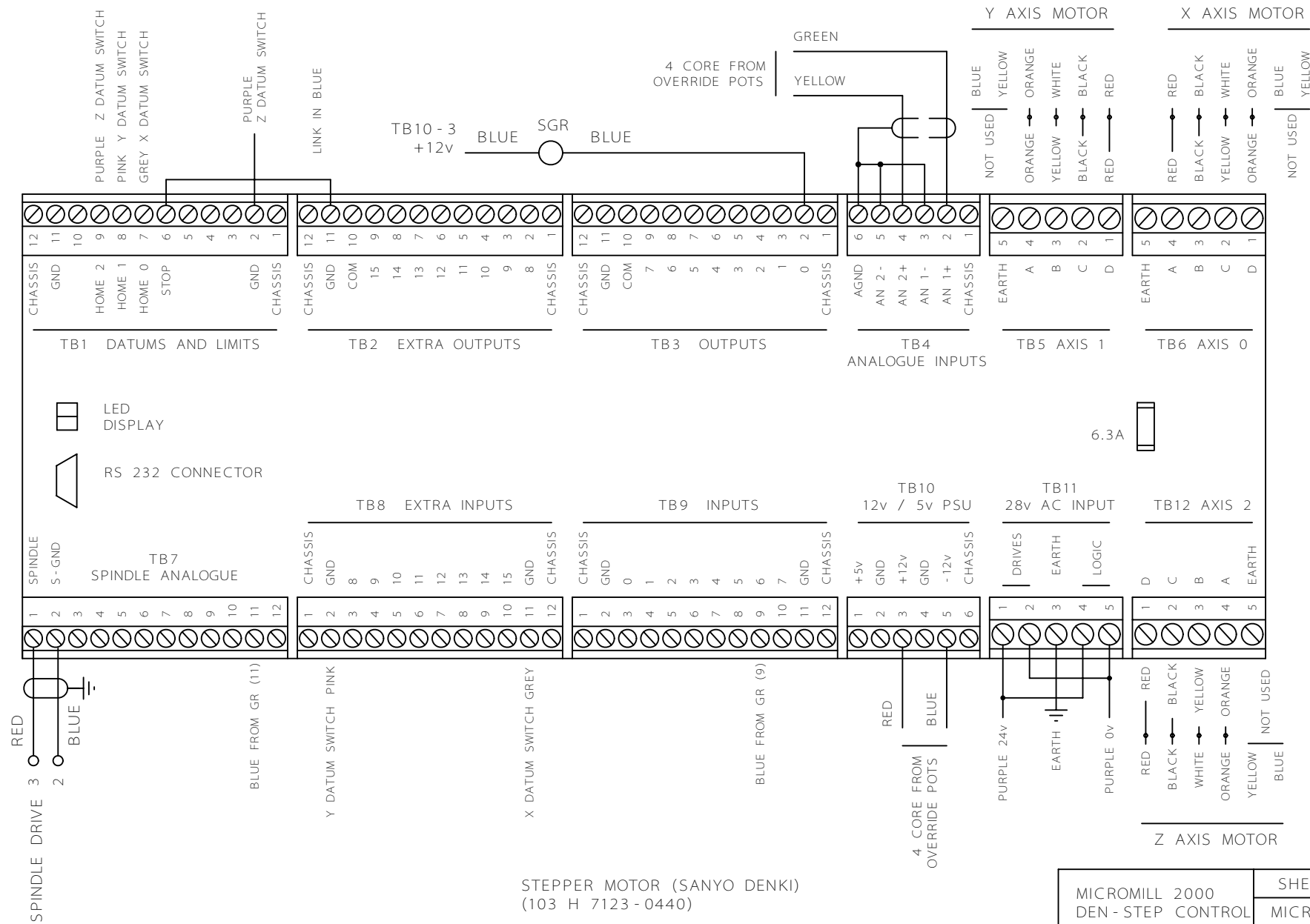
RELAY NAMES

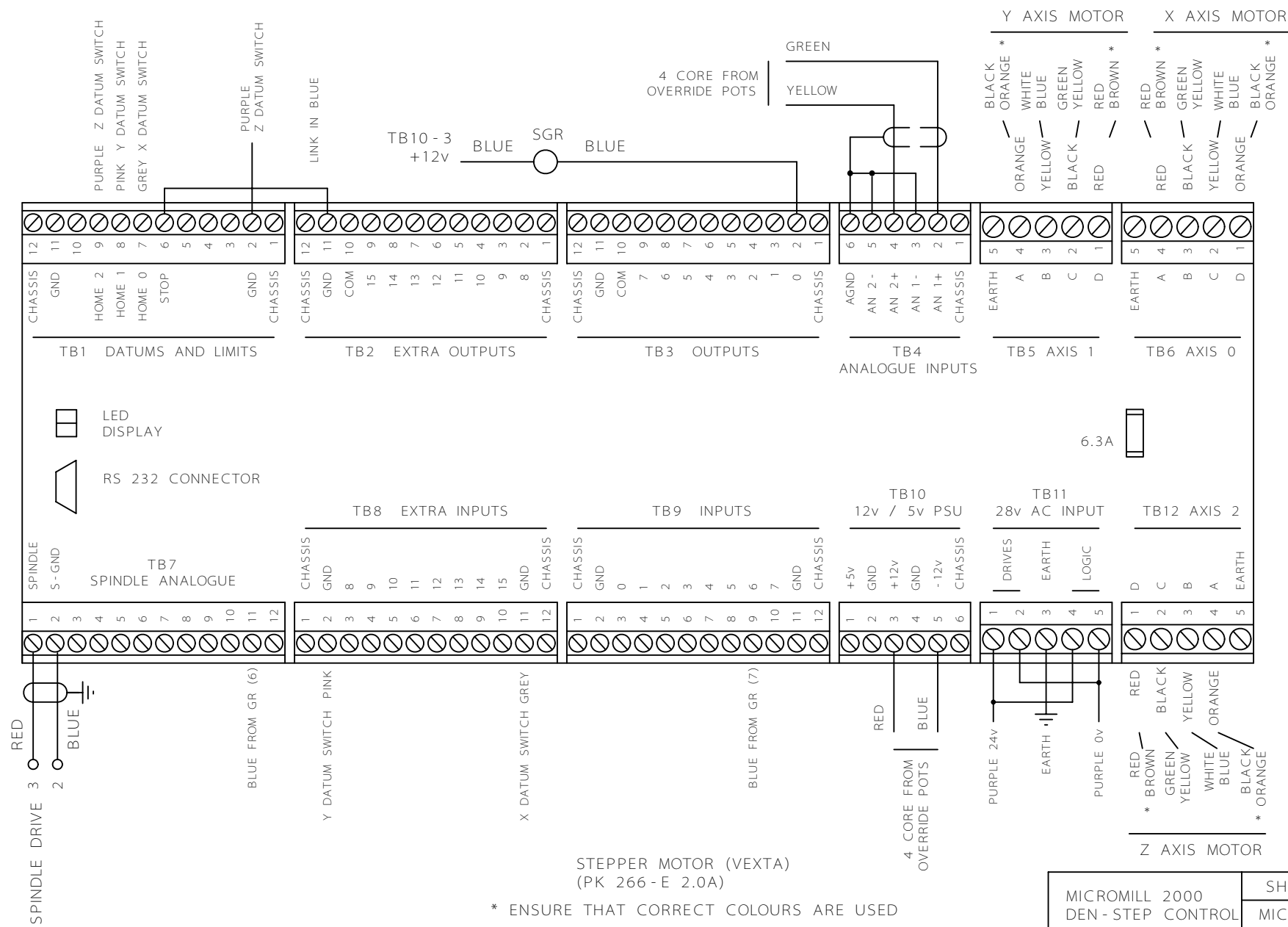
MR MAIN RELAY COIL - 110v AC
 GR GUARD RELAY COIL - 12v AC
 SGR SPINDLE GO RELAY COIL - 12v DC

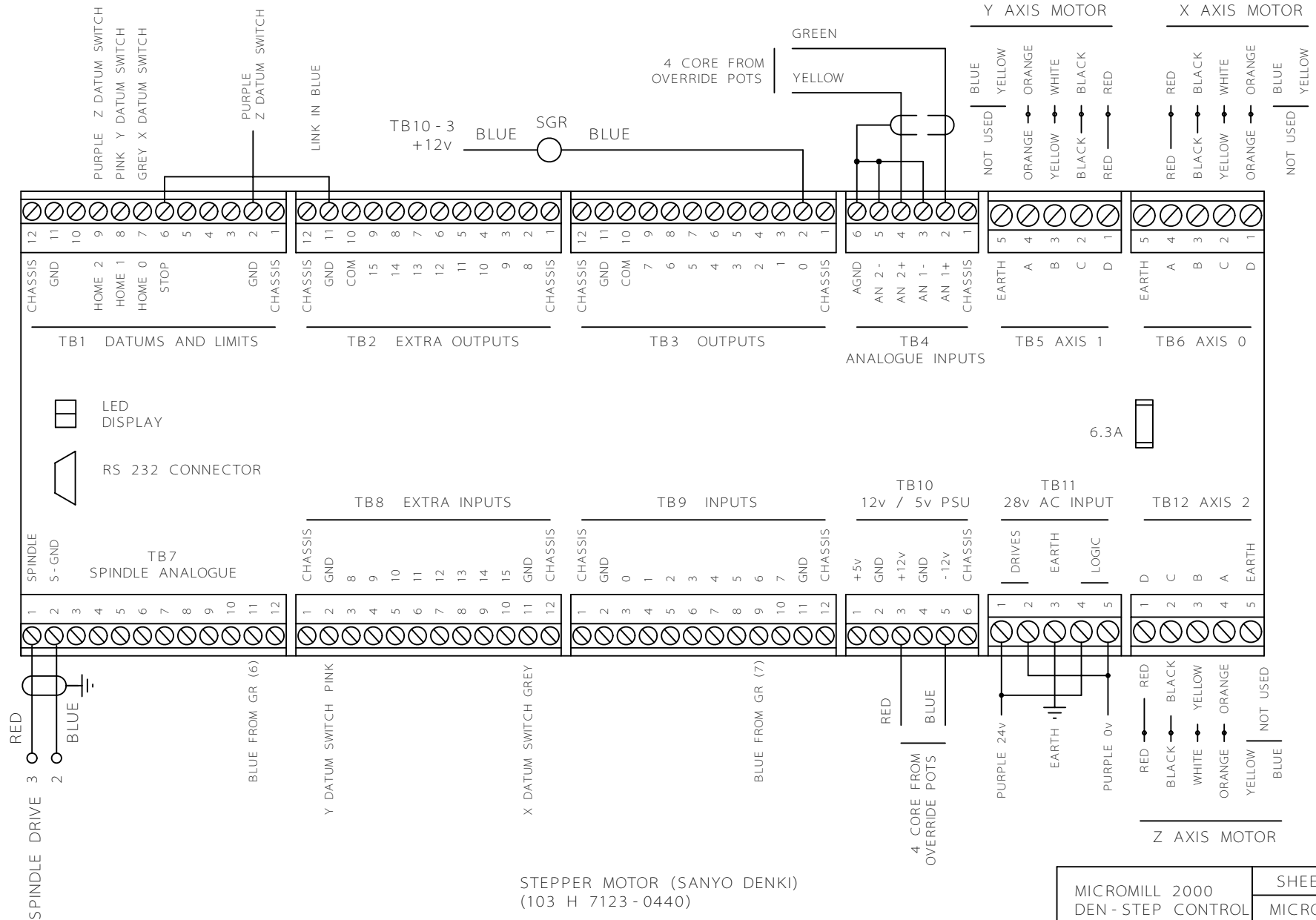
MICROMILL 2000
 RELAY AND FUSE
 WIRING

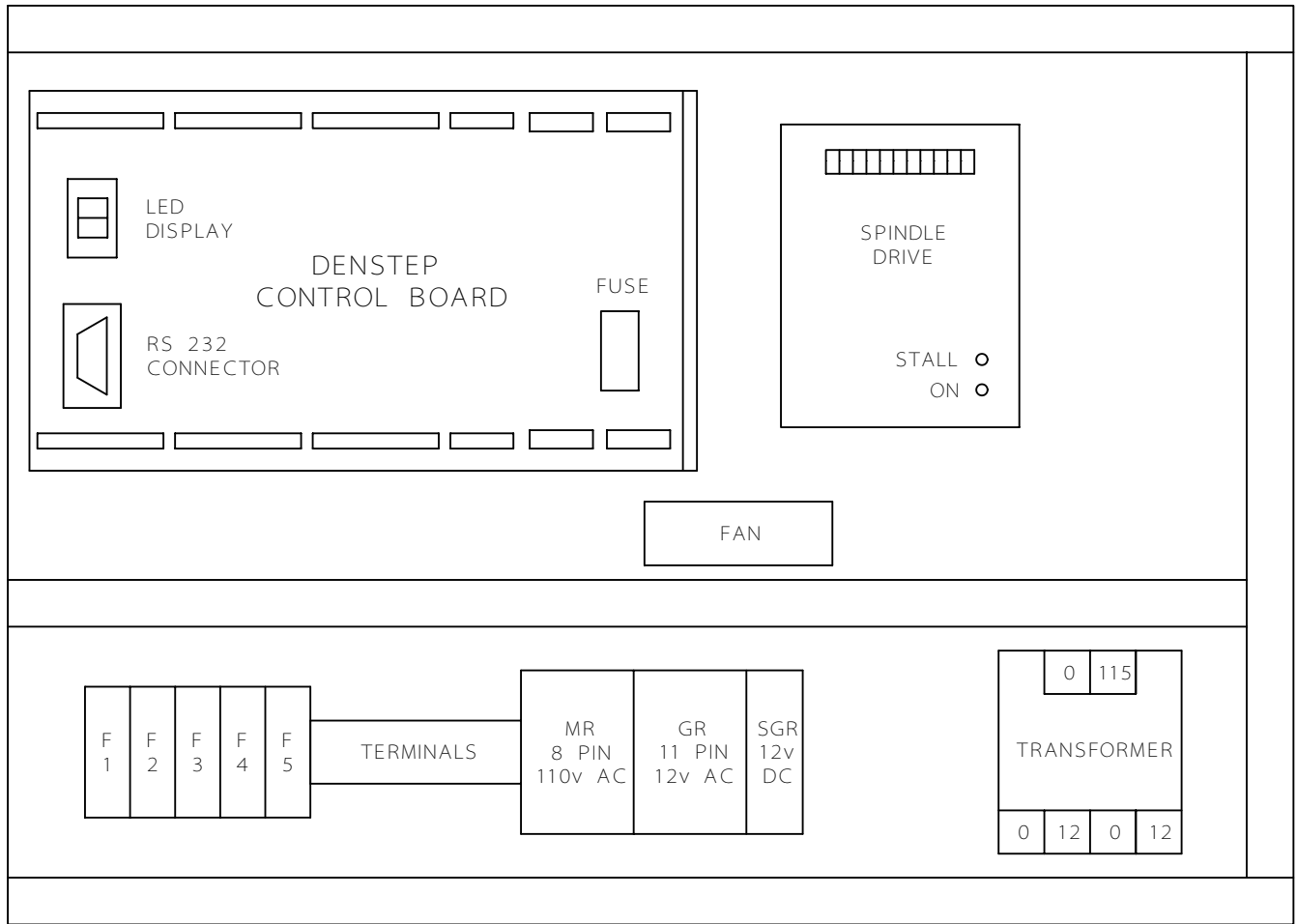
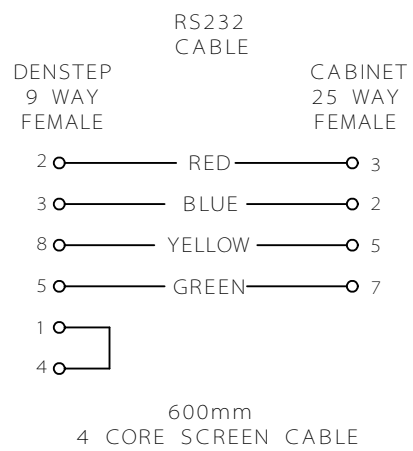
SHEET 2
 MICROMILL
 DENSTEP





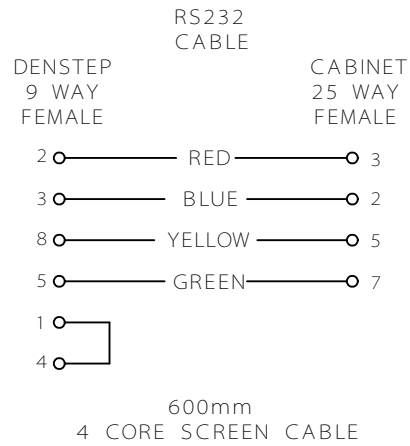
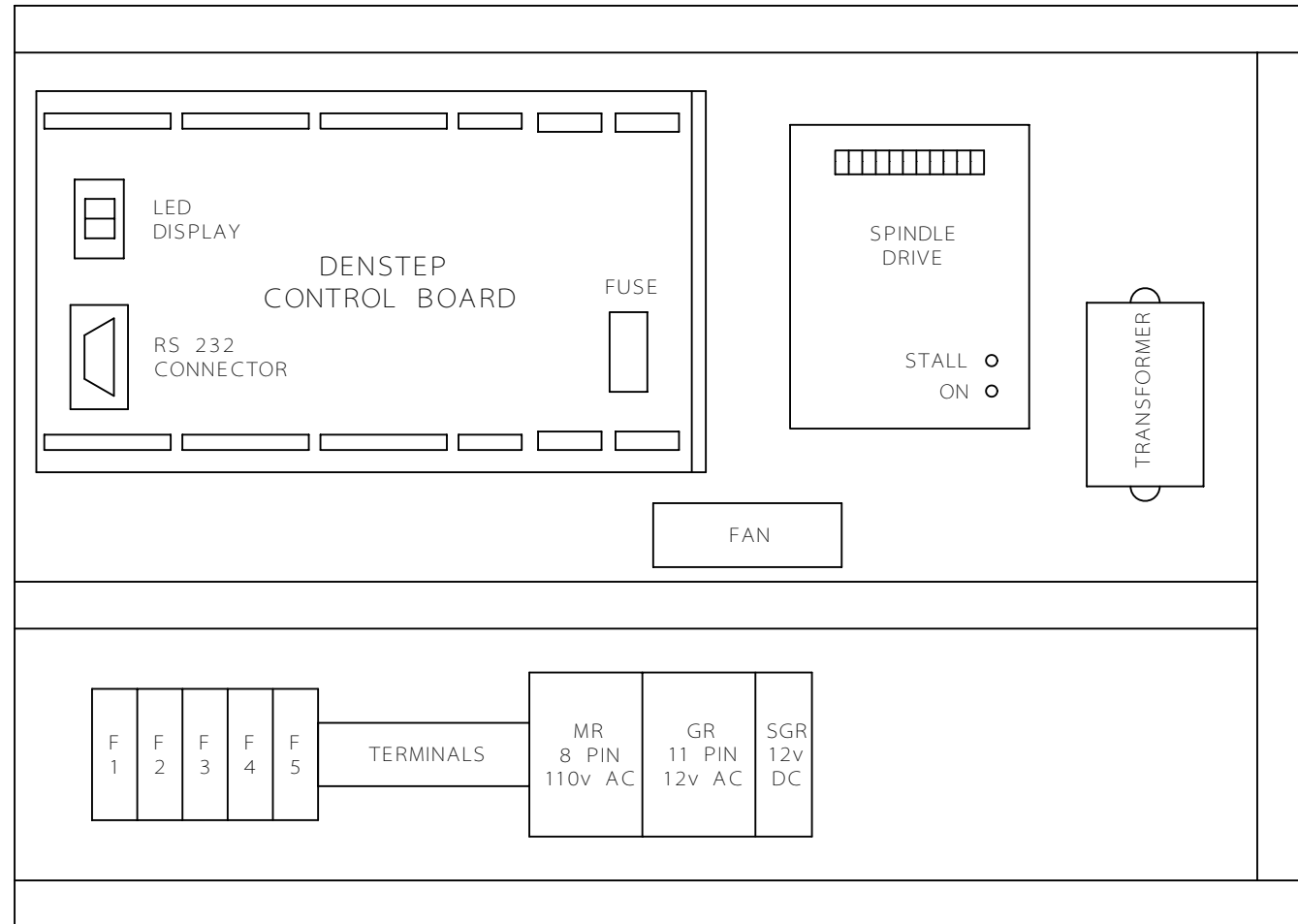






RELAY NAMES
 MR MAIN RELAY
 GR GUARD RELAY
 SGR SPINDLE GO RELAY

| | |
|---|-----------|
| MICROMILL 2000 PANEL LAYOUT AND RS232 CABLE | SHEET 4 |
| | MICROMILL |
| | DENSTEP |



RELAY NAMES

MR MAIN RELAY

GR GUARD RELAY

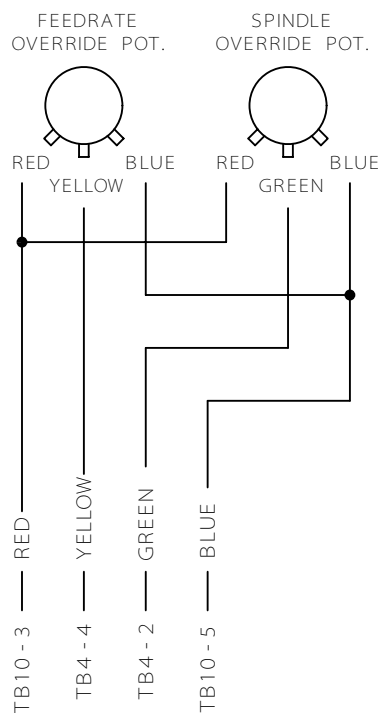
SGR SPINDLE GO RELAY

MICROMILL 2000
PANEL LAYOUT
AND RS232 CABLE

SHEET 4

MICROMILL

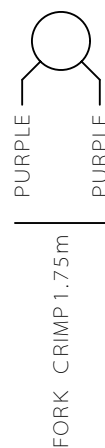
DENSTEP



KEY SWITCH



MACHINE ON
LAMP



EMERGENCY
STOP
SWITCH

FORK CRIMP
AT SWITCH END



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650mm | FERRULE |

STEPPER MOTOR (VEXTA)
(PK 266 - E 2.0A)

| | | |
|----------|--------|--------------|
| RED | RED | |
| BROWN * | | |
| WHITE | YELLOW | X AXIS 1.1m |
| BLUE | | Y AXIS 1.75m |
| | | Z AXIS 1.15m |
| BLACK | | |
| ORANGE * | ORANGE | FERRULE |
| GREEN | | |
| YELLOW | BLACK | |

DATUM SWITCHES

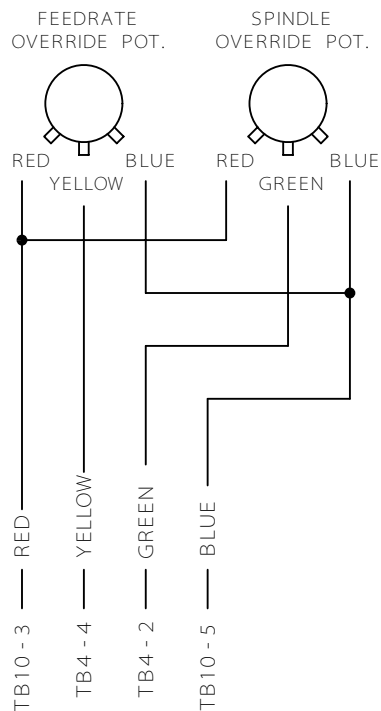
90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

* ENSURE THAT CORRECT COLOURS ARE USED

MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

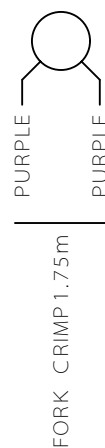
SHEET 5
MICROMILL
DENSTEP



KEY SWITCH



MACHINE ON
LAMP



EMERGENCY
STOP
SWITCH

FORK CRIMP
AT SWITCH END



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650m | FERRULE |

STEPPER MOTOR (SANYO DENKI)
(103 H 7123 - 0440)

| | |
|--------|---------------|
| RED | RED |
| BLACK | BLACK |
| ORANGE | ORANGE |
| WHITE | YELLOW |
| BLUE | NOT CONNECTED |
| YELLOW | |
| X AXIS | 1.1m FERRULE |
| Y AXIS | 1.75m |
| Z AXIS | 1.15m |

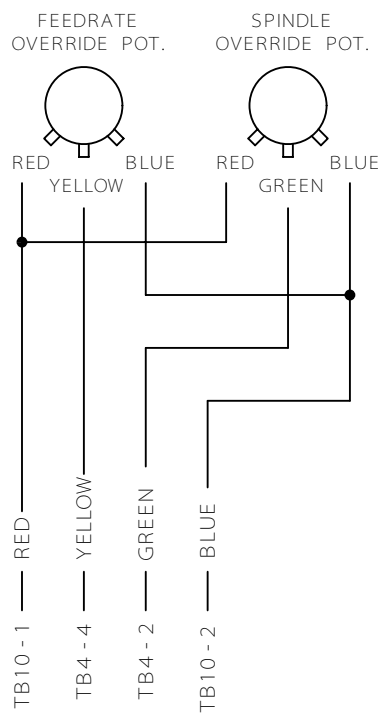
DATUM SWITCHES

90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

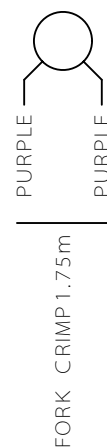
SHEET 5
MICROMILL
DENSTEP



KEY SWITCH



MACHINE ON
LAMP



EMERGENCY
STOP
SWITCH

FORK CRIMP
AT SWITCH END



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650mm | FERRULE |

STEPPER MOTOR (VEXTA)
(PK 266 - E 2.0A)

| | | |
|----------|--------|--------------|
| RED | RED | |
| BROWN * | | |
| WHITE | YELLOW | X AXIS 1.1m |
| BLUE | | Y AXIS 1.75m |
| | | Z AXIS 1.15m |
| BLACK | | |
| ORANGE * | ORANGE | |
| | | FERRULE |
| GREEN | | |
| YELLOW | BLACK | |

DATUM SWITCHES

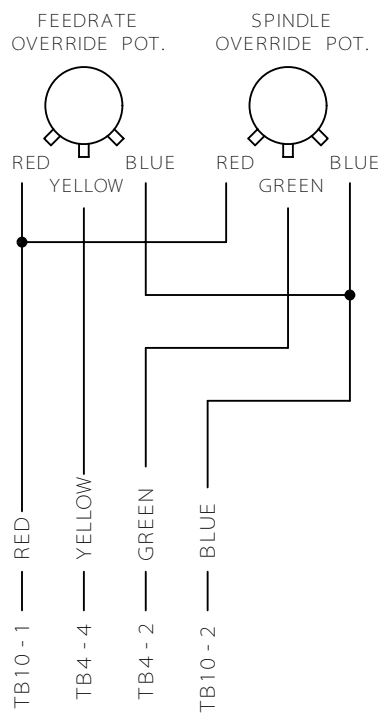
90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

* ENSURE THAT CORRECT COLOURS ARE USED

MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

SHEET 5
MICROMILL
DENSTEP



KEY SWITCH



MACHINE ON
LAMP



EMERGENCY
STOP
SWITCH

FORK CRIMP
AT SWITCH END



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650mm | FERRULE |

STEPPER MOTOR (SANYO DENKI)
(103 H 7123 - 0440)

| | |
|--------|---------------|
| RED | RED |
| BLACK | BLACK |
| ORANGE | ORANGE |
| WHITE | YELLOW |
| BLUE | NOT CONNECTED |
| YELLOW | |
| X AXIS | 1.1m FERRULE |
| Y AXIS | 1.75m |
| Z AXIS | 1.15m |

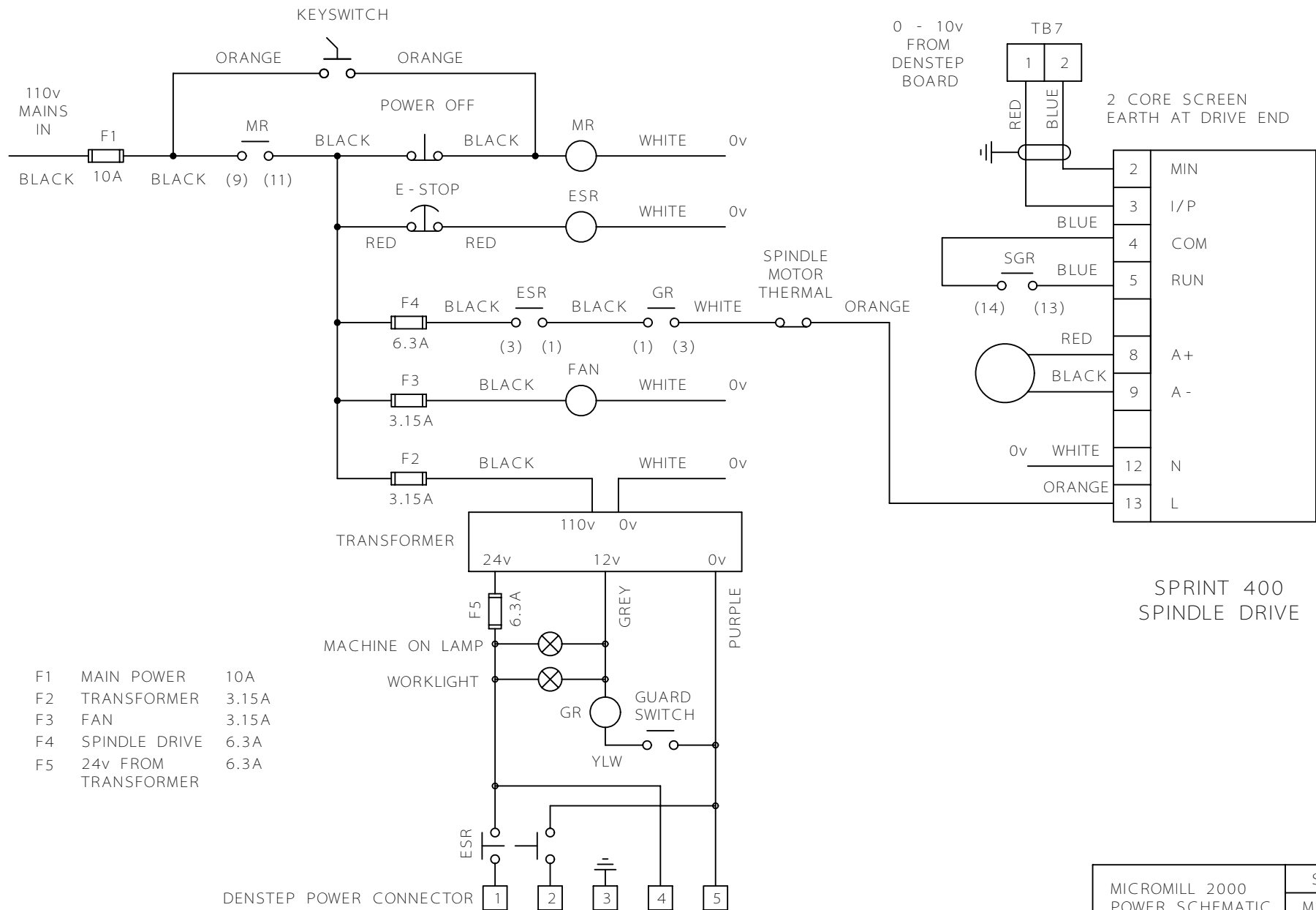
DATUM SWITCHES

90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

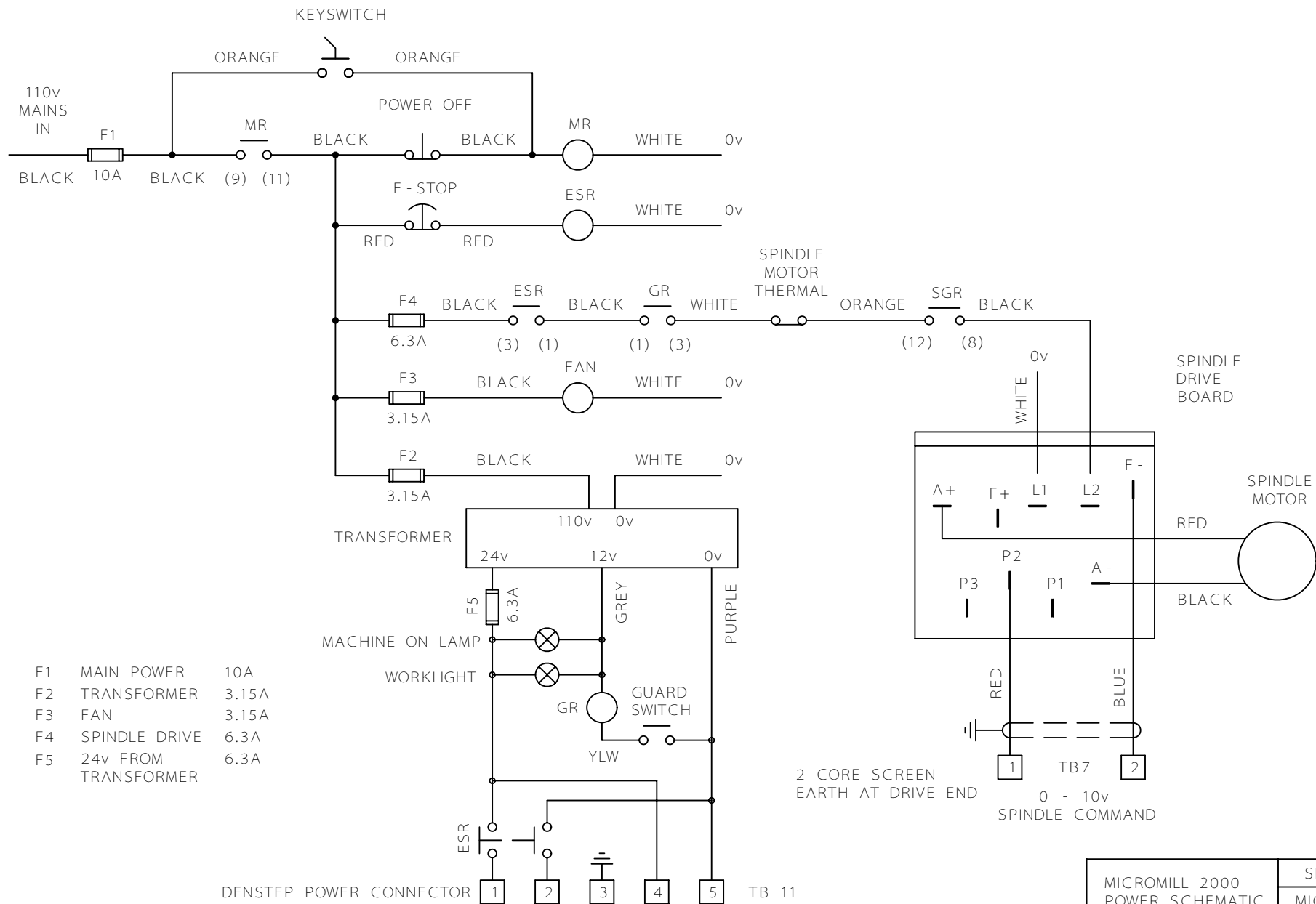
MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

SHEET 5
MICROMILL
DENSTEP



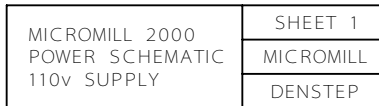
MICROMILL 2000
POWER SCHEMATIC
110v SUPPLY

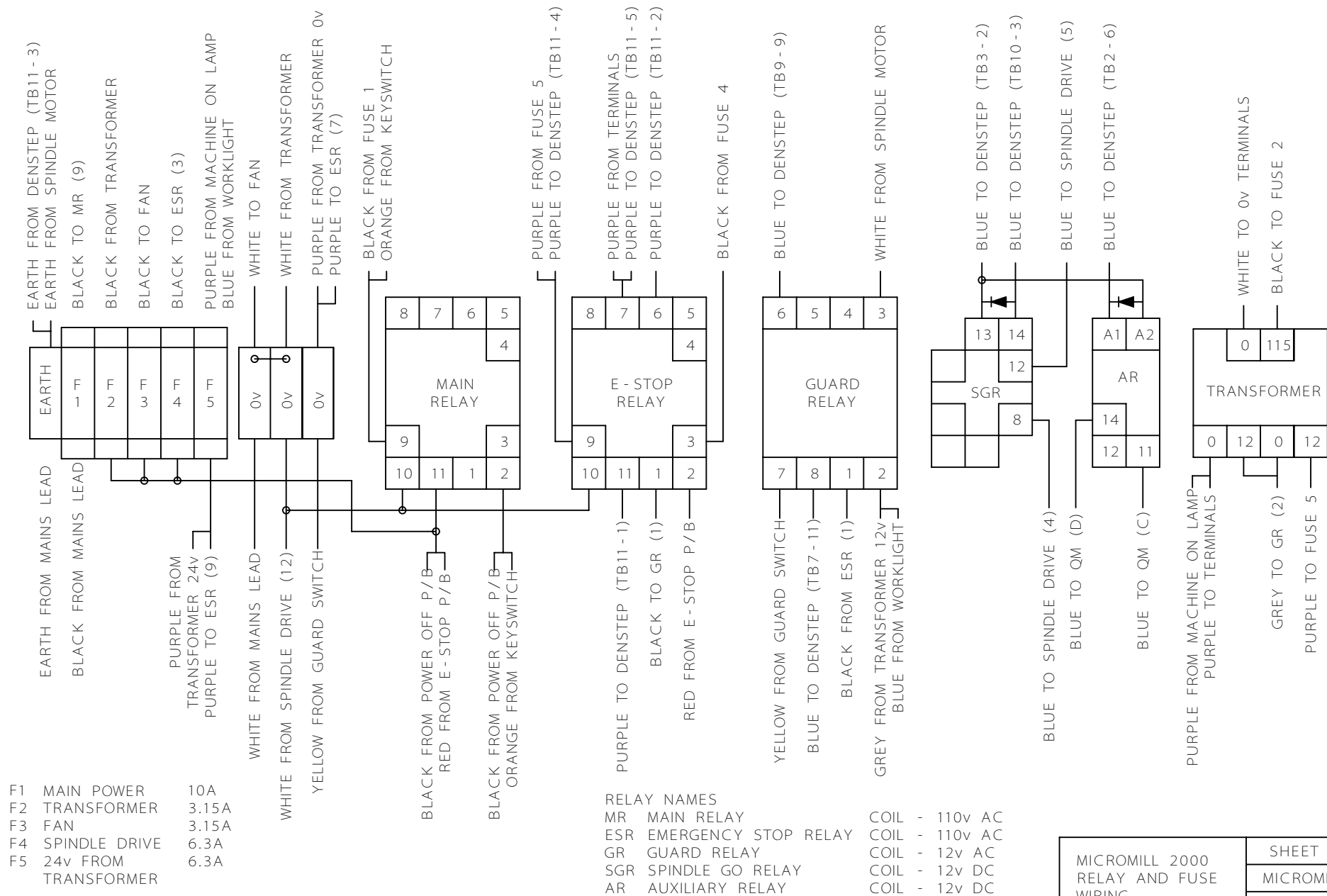
SHEET 1
MICROMILL
DENSTEP

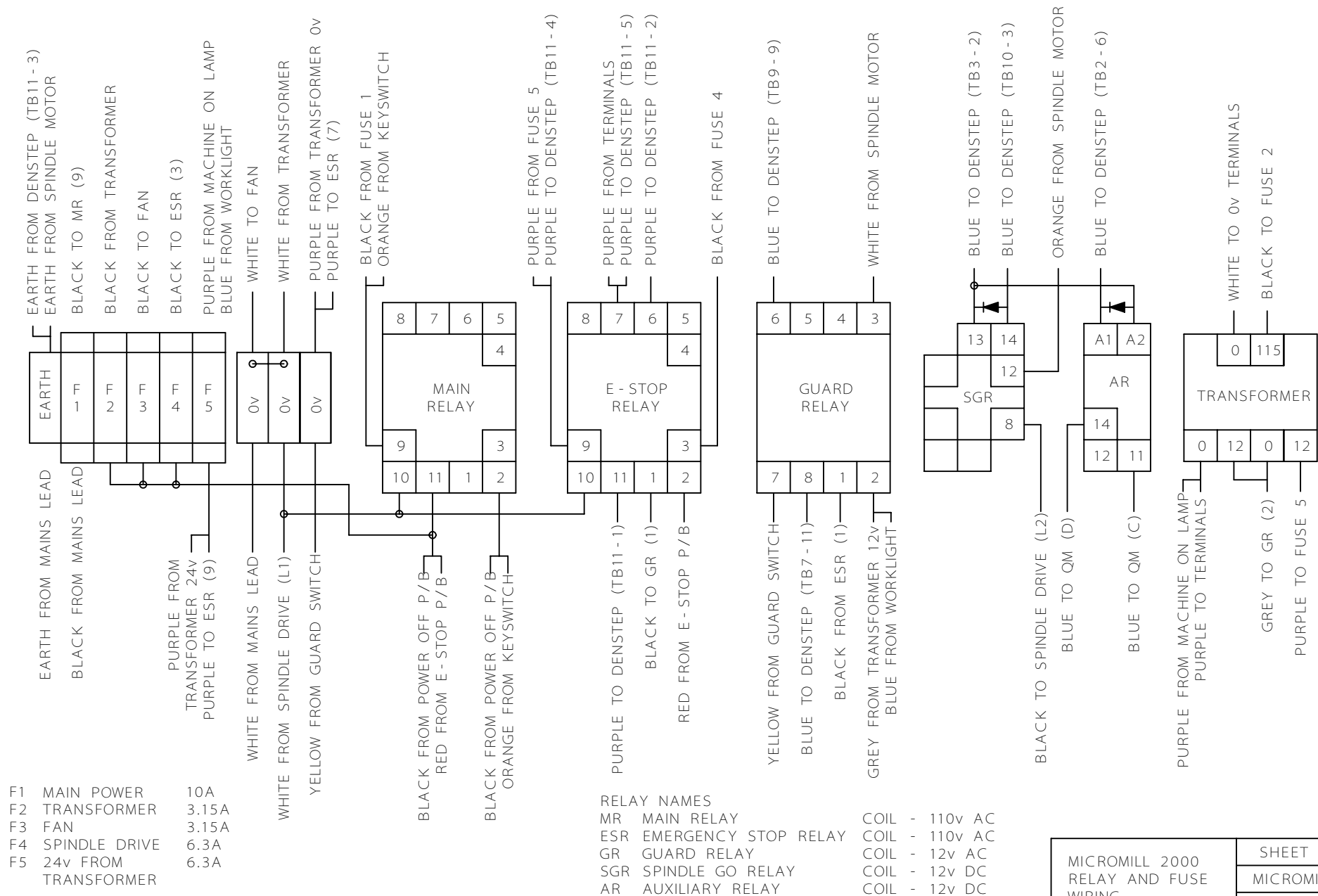


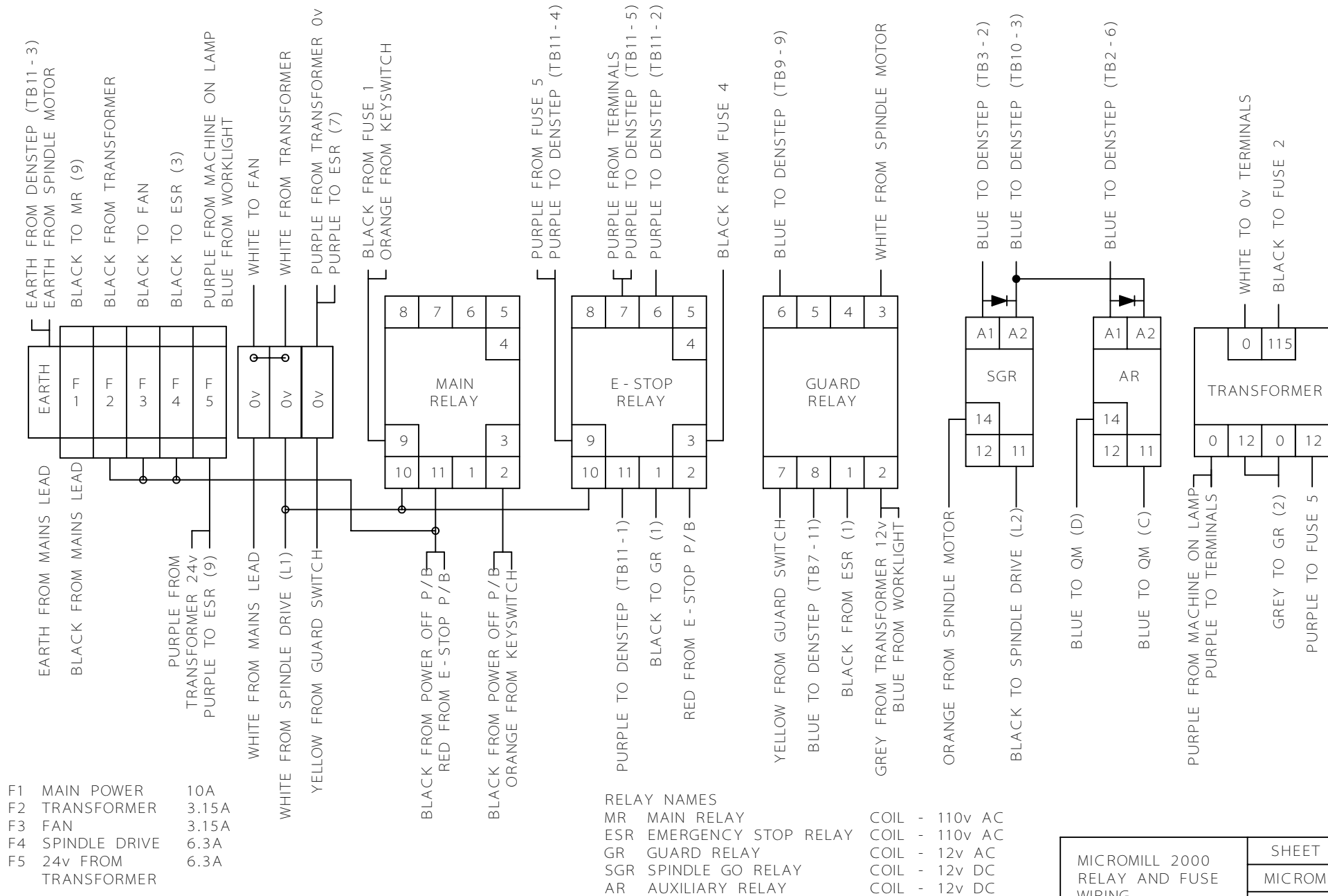
MICROMILL 2000
POWER SCHEMATIC
110v SUPPLY

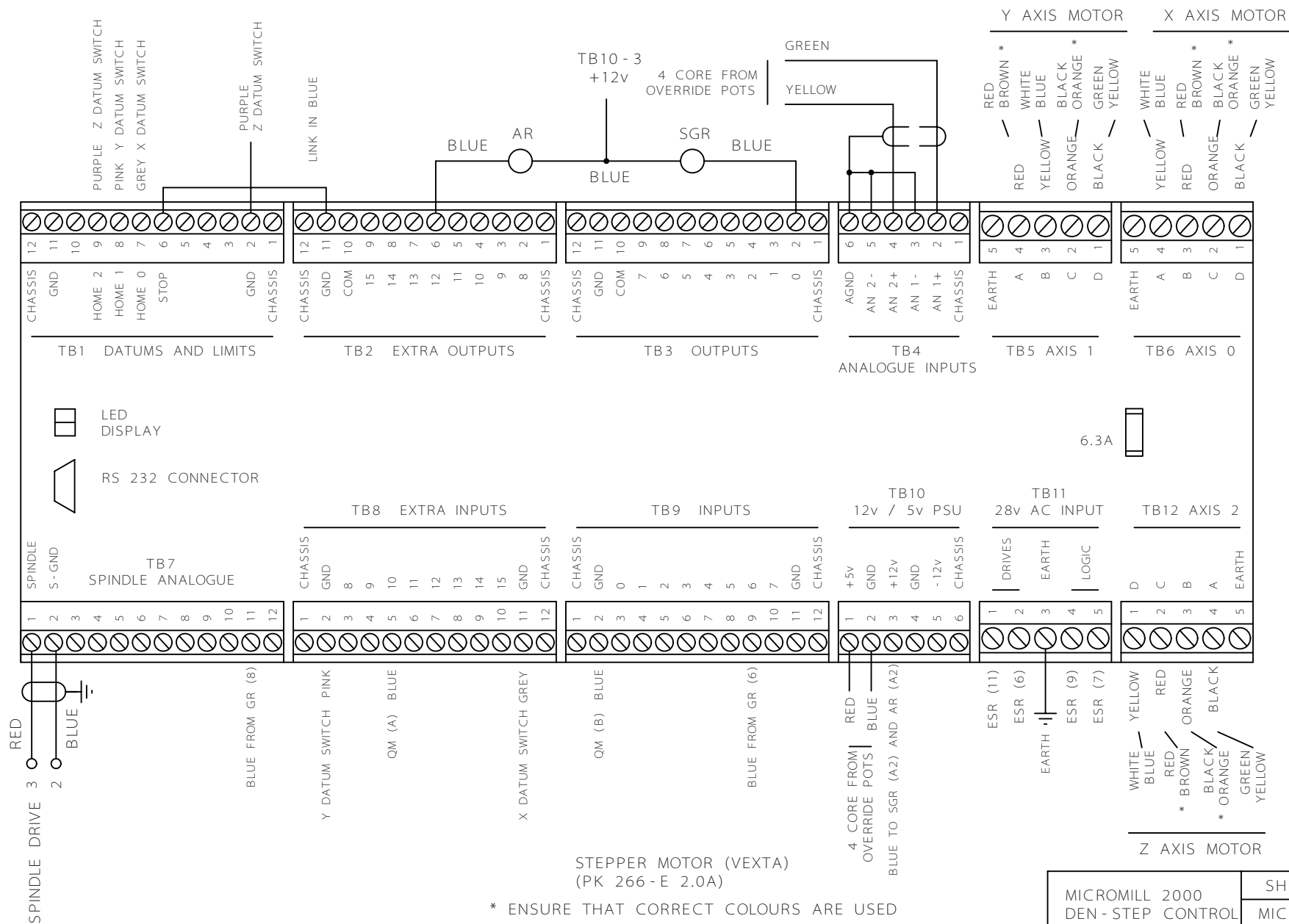
SHEET 1
MICROMILL
DENSTEP





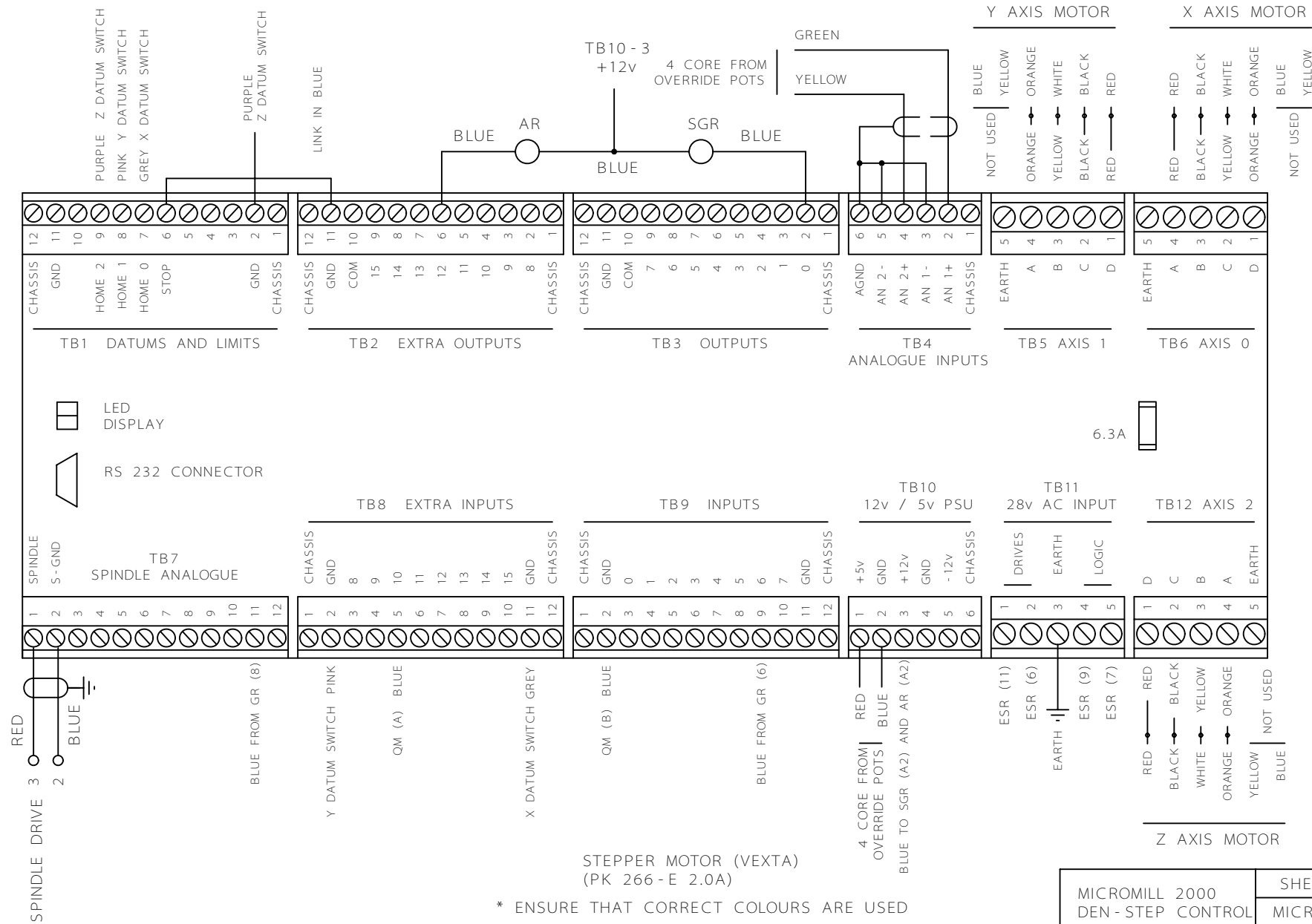


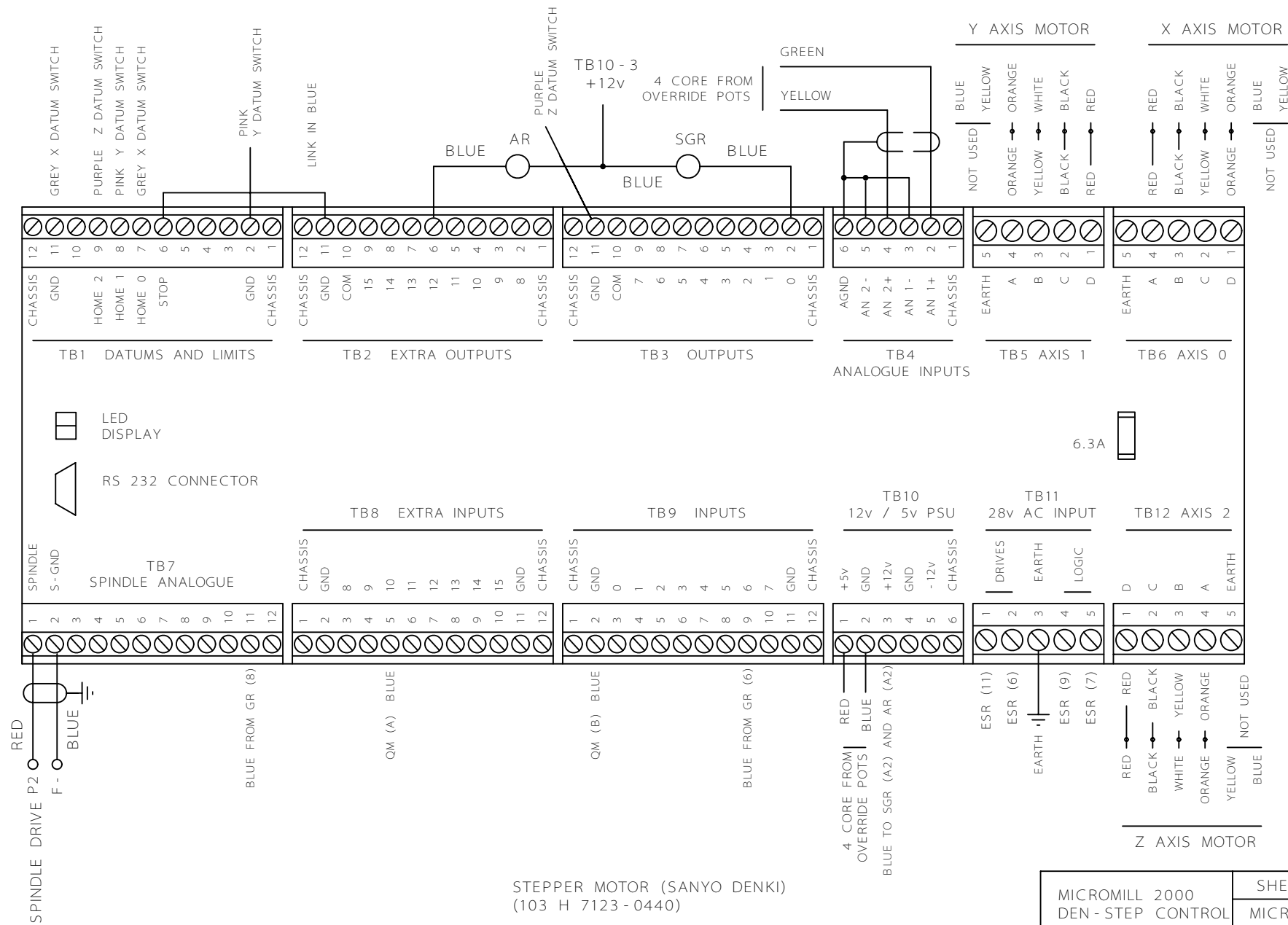




* ENSURE THAT CORRECT COLOURS ARE USED

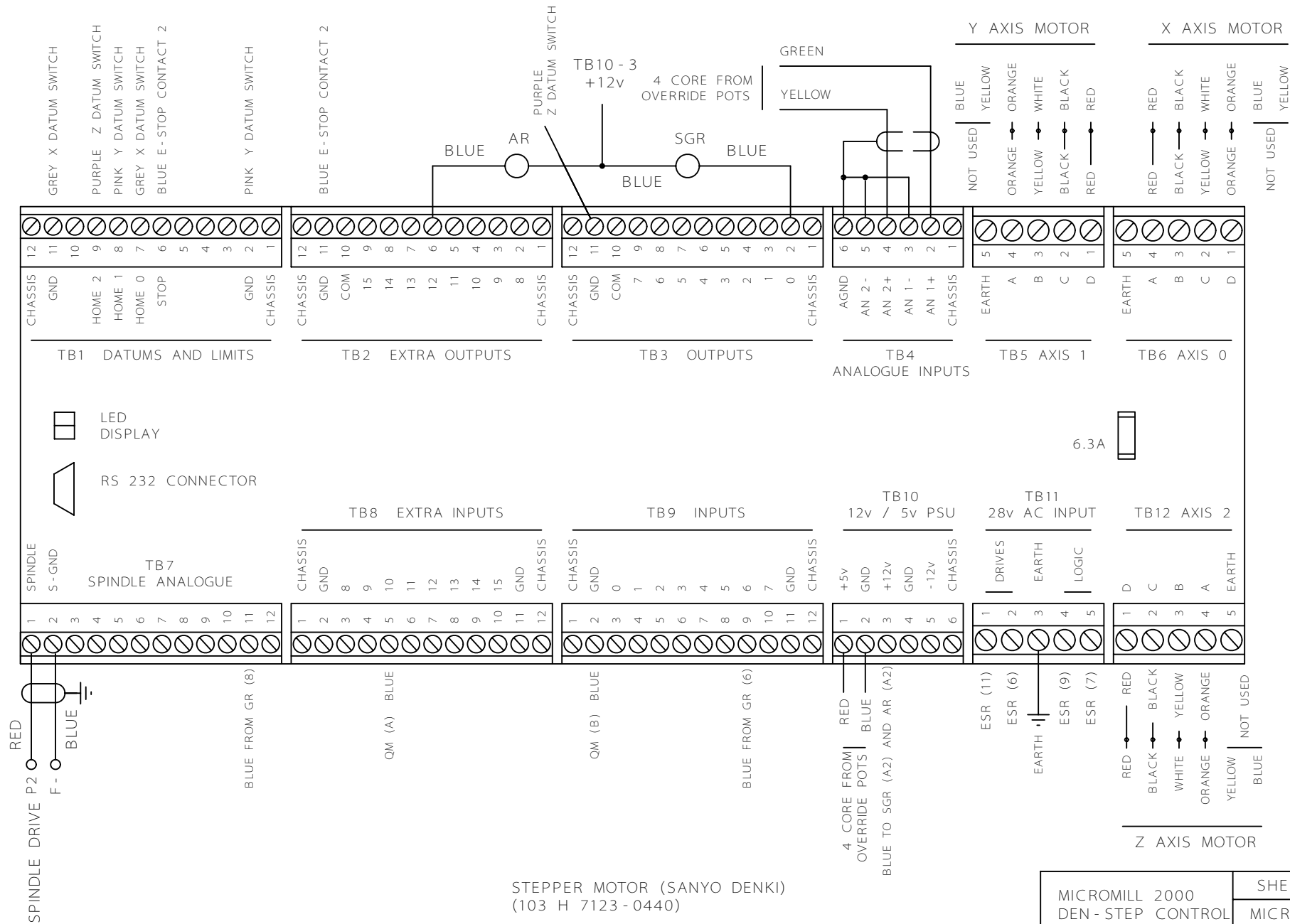
| | |
|--|-----------|
| MICROMILL 2000 DEN - STEP CONTROL BOARD WIRING | SHEET 3 |
| | MICROMILL |
| | DENSTEP |

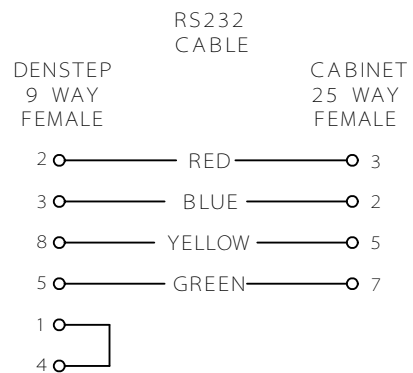




MICROMILL 2000
DEN - STEP CONTROL
BOARD WIRING

SHEET 3
MICROMILL
DENSTEP



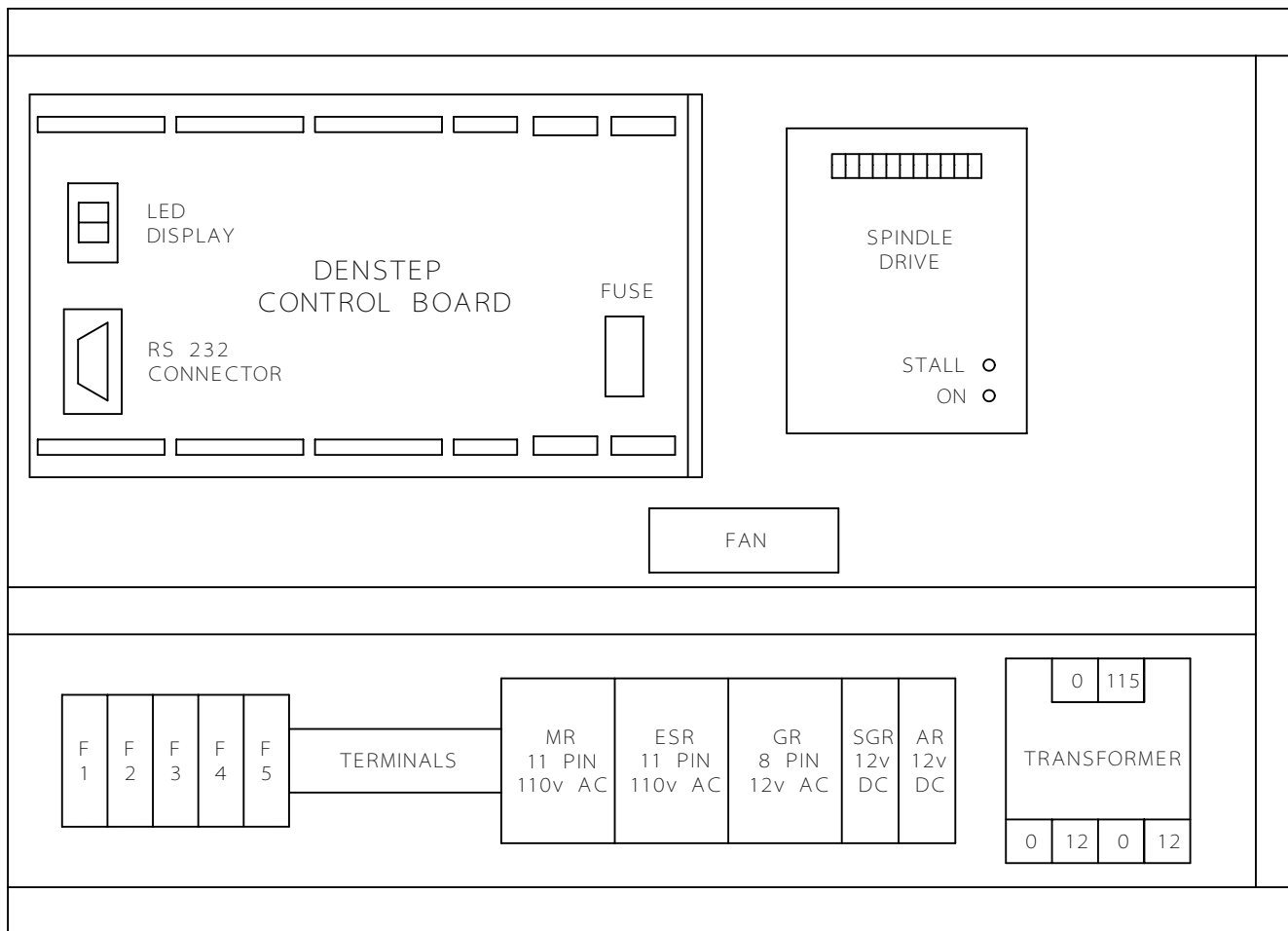


600mm
4 CORE SCREEN CABLE

AUXILIARY CONNECTOR

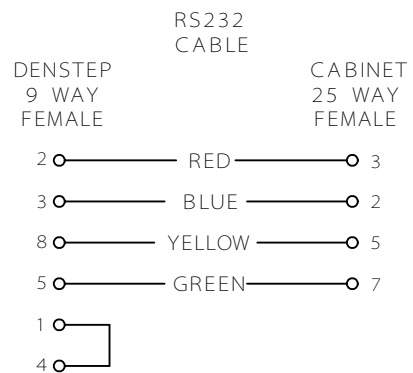


8 WAY QM (RS 467 - 194)
FEMALE PINS (RS 468 - 557)



RELAY NAMES
MR MAIN RELAY
ESR EMERGENCY STOP RELAY
GR GUARD RELAY
SGR SPINDLE GO RELAY
AR AUXILIARY RELAY

| | |
|---|-----------|
| MICROMILL 2000 PANEL LAYOUT AND RS232 CABLE | SHEET 4 |
| | MICROMILL |
| | DENSTEP |

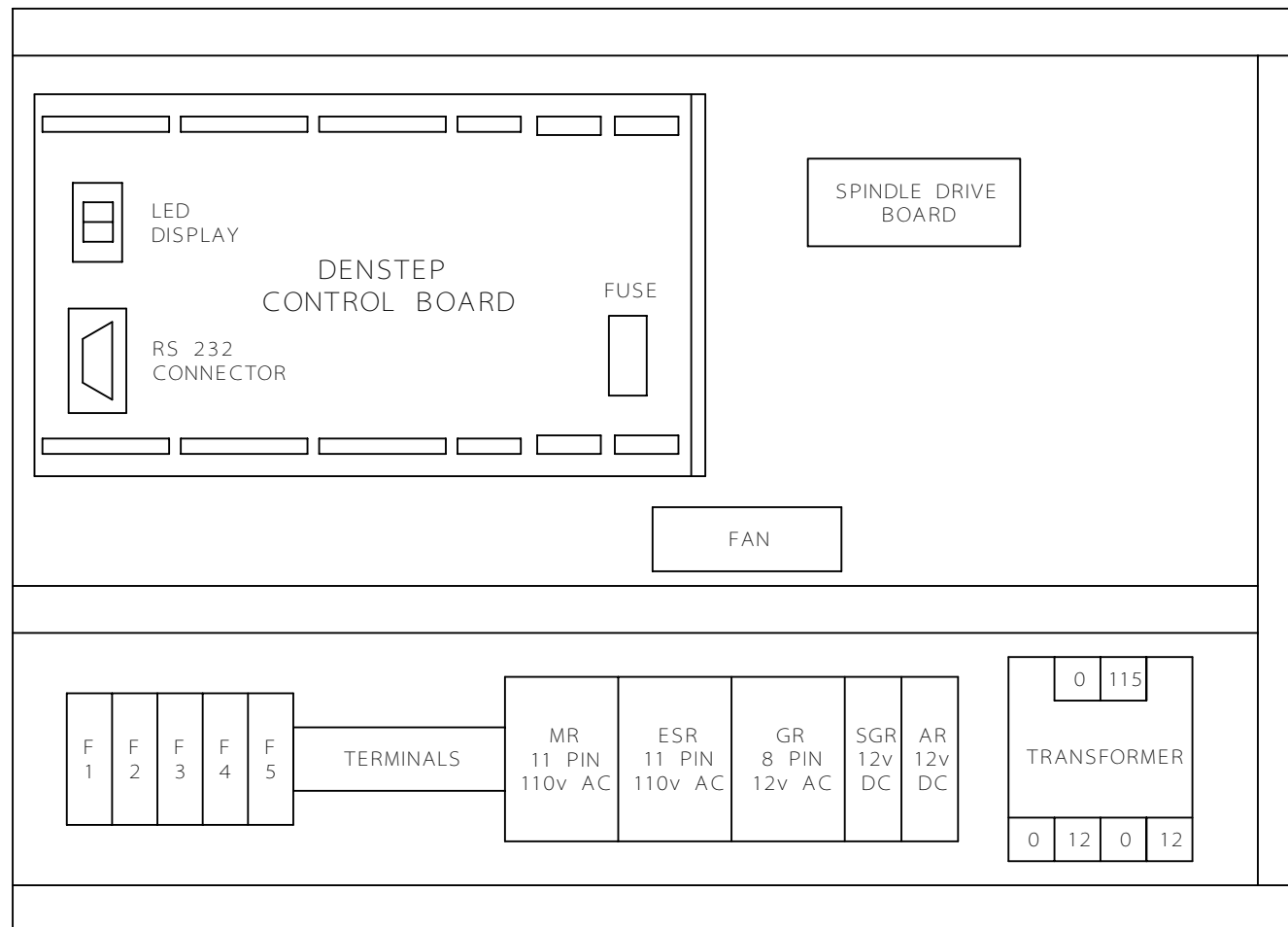


600mm
4 CORE SCREEN CABLE

AUXILIARY
CONNECTOR

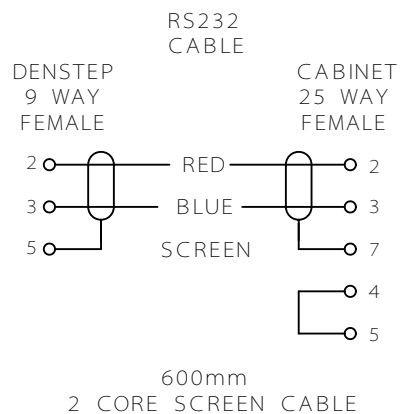


8 WAY QM (RS 467 - 194)
FEMALE PINS (RS 468 - 557)



RELAY NAMES
MR MAIN RELAY
ESR EMERGENCY STOP RELAY
GR GUARD RELAY
SGR SPINDLE GO RELAY
AR AUXILIARY RELAY

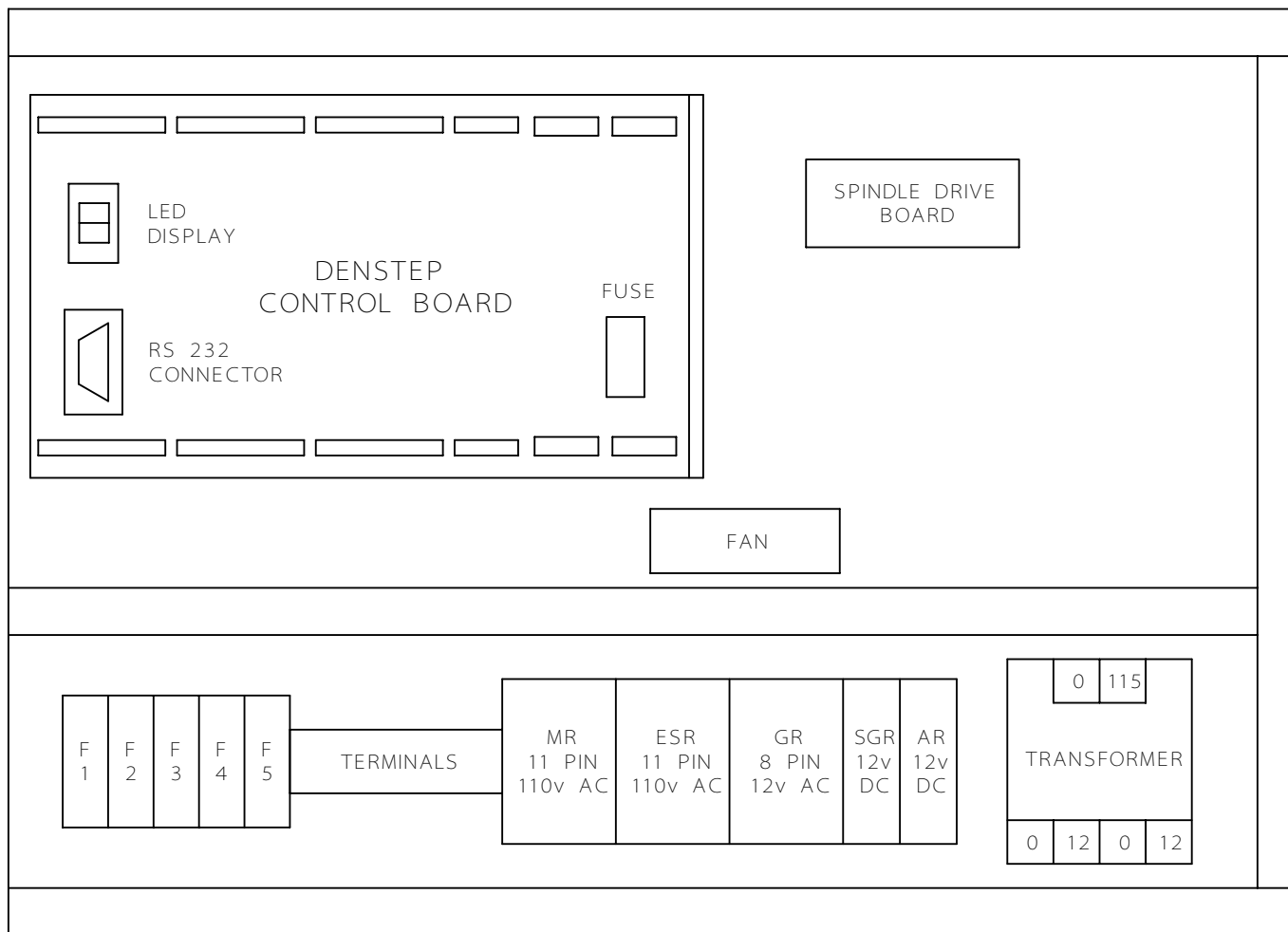
| | |
|---|-----------|
| MICROMILL 2000 PANEL LAYOUT AND RS232 CABLE | SHEET 4 |
| | MICROMILL |
| | DENSTEP |



AUXILIARY CONNECTOR



8 WAY QM (RS 467 - 194)
FEMALE PINS (RS 468 - 557)



RELAY NAMES

MR MAIN RELAY

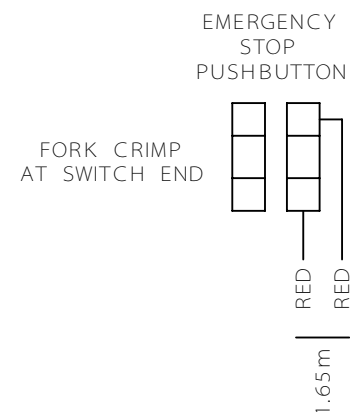
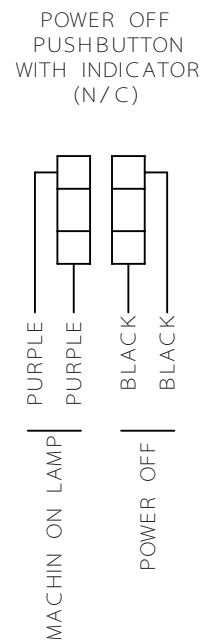
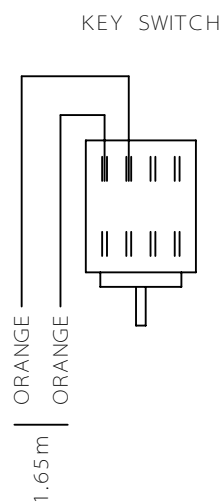
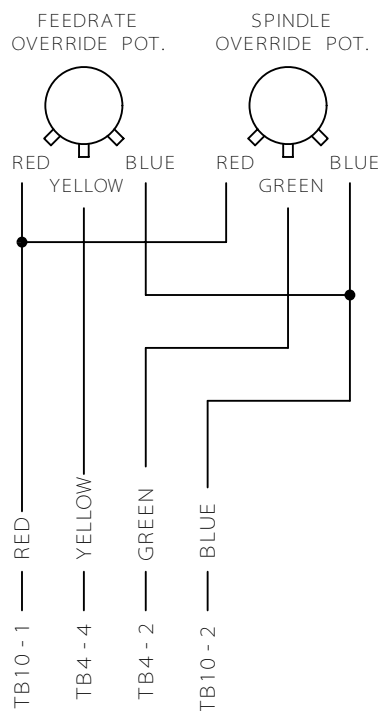
ESR EMERGENCY STOP RELAY

GR GUARD RELAY

SGR SPINDLE GO RELAY

AR AUXILIARY RELAY

| | |
|---|-----------|
| MICROMILL 2000 PANEL LAYOUT AND RS232 CABLE | SHEET 4 |
| | MICROMILL |
| | DENSTEP |



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650mm | FERRULE |

STEPPER MOTOR (VEXTA) (PK 266 - E 2.0A)

| | | |
|----------|--------|--------------|
| RED | RED | |
| BROWN * | | |
| WHITE | YELLOW | X AXIS 1.1m |
| BLUE | | Y AXIS 1.75m |
| | | Z AXIS 1.15m |
| BLACK | ORANGE | |
| ORANGE * | | FERRULE |
| GREEN | BLACK | |
| YELLOW | | |

DATUM SWITCHES

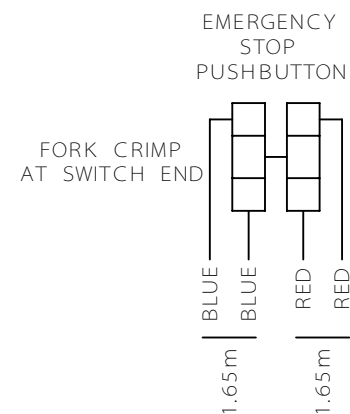
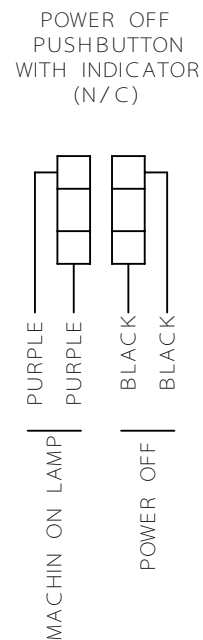
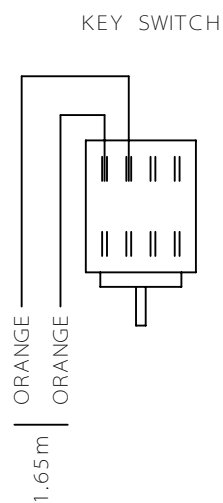
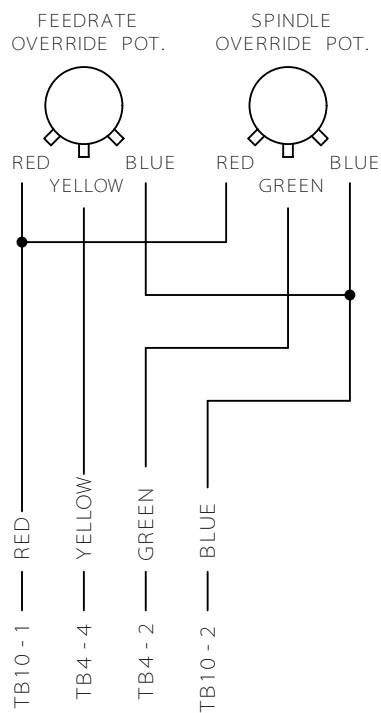
90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

* ENSURE THAT CORRECT COLOURS ARE USED

MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

SHEET 5
MICROMILL
DENSTEP



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650mm | FERRULE |

STEPPER MOTOR (VEXTA) (PK 266 - E 2.0A)

| | | |
|----------|--------|--------------|
| RED | RED | |
| BROWN * | | |
| WHITE | YELLOW | X AXIS 1.1m |
| BLUE | | Y AXIS 1.75m |
| | | Z AXIS 1.15m |
| BLACK | | |
| ORANGE * | ORANGE | FERRULE |
| GREEN | | |
| YELLOW | BLACK | |

DATUM SWITCHES

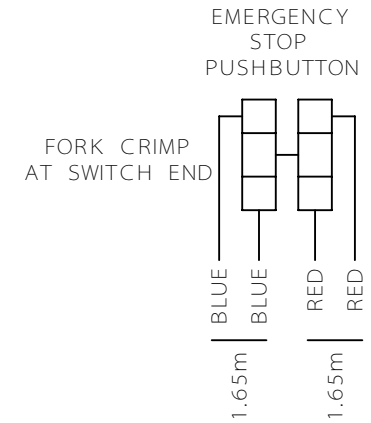
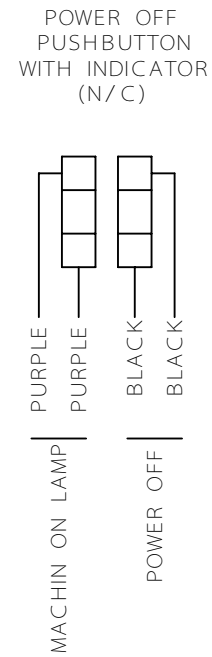
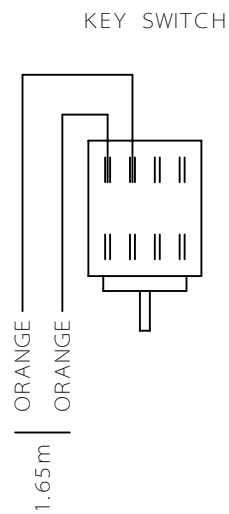
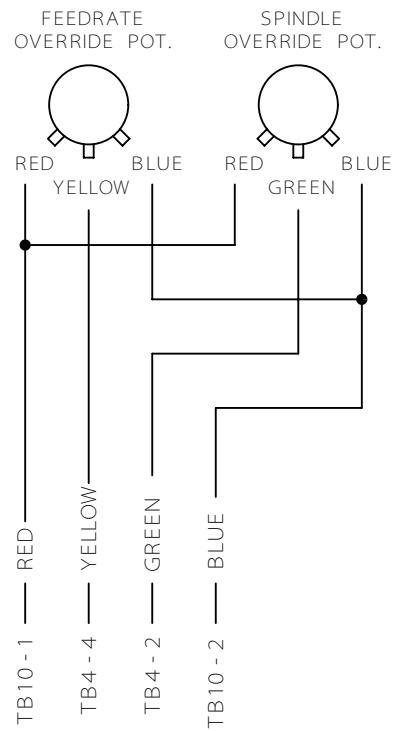
90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

* ENSURE THAT CORRECT COLOURS ARE USED

MICROMILL 2000
SWITCH AND MOTOR
WIRING DETAILS

SHEET 5
MICROMILL
DENSTEP



SPINDLE MOTOR

| | | |
|--------|-------|------------|
| RED | 650mm | FERRULE |
| BLACK | 650mm | FERRULE |
| ORANGE | 1.4m | FERRULE |
| WHITE | 1.1m | FORK CRIMP |
| GREEN | 650m | FERRULE |

STEPPER MOTOR (SANYO DENKI) (103 H 7123 - 0440)

| | |
|--------|---------------|
| RED | RED |
| BLACK | BLACK |
| ORANGE | ORANGE |
| WHITE | YELLOW |
| BLUE | NOT CONNECTED |
| YELLOW | |

| | | |
|--------|-------|---------|
| X AXIS | 1.1m | FERRULE |
| Z AXIS | 1.75m | |

DATUM SWITCHES

90° CRIMPS AT SWITCH END WITH
180mm BLACK HEATSHRINK
FERRULES AT PANEL END

| | | |
|--------|------|--------|
| X AXIS | 1.1m | GREY |
| Y AXIS | 1.9m | PINK |
| Z AXIS | 1m | PURPLE |

| | |
|--|-----------|
| MICROMILL 2000 SWITCH AND MOTOR WIRING DETAILS | SHEET 5 |
| | MICROMILL |
| | DENSTEP |